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THE BRITISH
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THE INFLUENCE OF THE ENDOCRINES IN THE PSYCHONEUROSES[1].

BY W. LANGDON BROWN.

SYNOPSIS.

The hormone theory at one time tended to an undue depreciation of the importance of the nervous control of the body.

The primitive nervous system was evolved for defensive purposes, and the sympathetic nervous system retains primitive features both structurally and functionally.

There is a close association between the sympathetic nervous system and the endocrine glands as defensive mechanisms, and their action is reciprocal.

The endocrines, gonads and sympathetic nervous system form a basic tripod entrusted with the defence of the individual and the continuity of the species.

Endocrine glands may be influenced by toxic, nutritional and psychic factors, so that they may, alike, cause or be affected by a psychoneurosis.

The endocrine-sympathetic system is merely the lowest level of the whole nervous system, and is inextricably entangled with the other levels. Hence the important influence of the endocrine system on psychical life.

THE theory of internal secretion has always been in advance of the facts. The very name was introduced by Claud Bernard when the only known example was the glycogenic function of the liver. Brown-Sequard's interesting hypotheses rested on but a small substratum of fact. Yet subsequent observations have confirmed many of their generalisations. This may happen with the uncontrolled speculations on endocrinology which are rife to-day. But we must always bear in mind that it has not yet occurred.

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[1] Read before the Medical Section of the British Psychological Society, June 22nd, 1921.

The last decade of the 19th century added greatly to our knowledge of the physiology of the ductless glands, while in 1902 Bayliss and Starling's discovery of secretin opened out the vista of a chemical control of the body, in which the nervous system merely acted as a trigger, firing off a series of reactions. This conception was elaborated until it bid fair to dethrone the nervous system from its supreme position, although Langley had already provided the antidote by his generalisation that the action of adrenalin on any part was the same as that obtained by stimulating the sympathetic. But the far-reaching significance of that generalisation was not yet appreciated. "The race is not to the swift nor to the strong but to the wise." "The key to evolution lies in the continuous development of the nervous system"—said Gaskell. Or, as Elliot-Smith put it: "Man has developed and become the greatest of the primates because of his faithful dependance upon development of the brain." Considering the struggle the central nervous system has had to obtain control, it is not likely it would abdicate its suzerainty in favour of the more ancient dynasty of chemo-tropism.

We ordinarily speak of the evolution of the nervous system as peacefully accomplished. A struggle for supremacy between two animals or between two species, we recognise. But it would appear that a similar struggle accompanies the integration of the multicellular individual. Many apparently peaceful events in nature prove on closer analysis to involve a concealed struggle. Man is a gregarious animal but he has not found it an easy task to adjust the desires of the individual to the needs of the community. Philosophers may lament this, theologians may attribute it to original sin, but it should lead the biologist to enquire whether the cells of which he is composed have always found it easy to sink their individuality in that of the organism. The thesis of a hostile symbiosis between the tissues of the body has been skilfully upheld by Morley Roberts. A strong central government is needed to keep order and no high degree of differentiation is possible in the animal body without the control of a centralised nervous system, which has gradually acquired an increasing predominance. It is not too much to say that this control, though for the benefit of the body as a whole, may be resented by the individual tissues. Wilfrid Trotter in a remarkable paper on "The Physiology of Pain" has recently developed the argument of an hostility between nervous and somatic tissues, which is expressed in the way the former insulates itself.

Without defensive mechanisms no animal can survive in the struggle for existence, and no method of defence remains impenetrable, for, if it were, the species possessing it would multiply to the exclusion of others. As evolution proceeds the apparatus for defence comes under the control of a central nervous system. Some defensive mechanisms, such as nettle cells, never become so controlled, but are replaced by other methods as the nervous system evolves. Certain primitive motor apparatus, such as cilia, also never come under such control, though they persist even in the highest animals. In general terms a central nervous system enables very rapid reactions to occur, and the need for such rapidity of response will first be experienced in the struggle for existence, when its advantage is at once manifest. G. H. Parker in his book on *The Elementary Nervous System* has brought new observations into relationship with previously known facts and has impressed upon us afresh that a nervous system starts as a series of independent receptors and effectors in the deeper layers of the skin, the cells of which sink in deeper and deeper, until they become concentrated into a central nervous system. Between the receptor and effector an adjustor mechanism developes, which is the germ of the whole associative apparatus. In the vertebrates these internuncial adjustor neurons compose the chief mass of the central organs. It is not too fanciful to compare the origin of the nervous system to a group of settlers on the coast, who gradually invade the interior, first singly and then in an organised army, as in the nervous system of vertebrates which arises as a tubular invagination from the surface. Once established the invader assumes control over the indigenous inhabitants, fortifying itself as it goes and maintaining its protectorate by a system of rapid communication throughout the invaded areas. The biological and sociological parallel is remarkably complete.

The sympathetic nervous system retains several primitive structural features—its ganglion cells remain peripheral, it operates through a primitive nerve net in such places as the intestine, and it has adjustor neurons lying largely outside the central nervous system. Functionally it recalls primitive methods in its lack of discriminative sensibility, and in the urgent, immediate, widespread and explosive character of its response. The sympathetic nervous system being originally evolved for rapid defensive purposes, the persistence of such primitive methods becomes intelligible.

Hostile symbiosis does not exclude alliances, and the sympathetic nervous system has entered into a close alliance with the endocrine glands, which represent a specialised survival of the old chemiotropic methods of control. The closeness of this alliance is particularly well seen in the adrenals. The chromaffin cells and the sympathetic ganglion cells migrated out from the sympathetic nervous system together, but the latter gradually became the more abundant, while the connector fibres of the sympathetic end alike around both and stimulate them to action. The medulla of the adrenal and the post-ganglionic elements of the sympathetic nervous system are homologous structures; and there is a gradual predominance of the nervous over the chemical element in the partnership as the higher levels of the nervous system are evolved. Further, their influence is reciprocal—the sympathetic exciting the secretion of adrenalin while adrenalin stimulates the sympathetic endings. Herein we can begin to appreciate the full significance of Langley's generalisation. A similar reciprocity exists between the thyroid and the sympathetic, the sympathetic stimulating thyroid secretion, which in its turn lowers the threshold to sympathetic stimulation. But further, thyroid secretion quickens the whole metabolic activities of the body, and that is precisely how the sympathetic activates the body for flight or fight.

I need hardly stop to remind you how the effects of sympathetic stimulation are designed to this end since it has been done in so masterly a fashion by Canon. I will content myself with a few, perhaps rather dogmatic statements to clear the ground for the next step in my argument.

The autonomic, vegetative or visceral nervous system consists of two great divisions, the sympathetic and the parasympathetic or extended vagus. The former is katabolic, converting potential energy into kinetic and facilitating outward manifestations of that energy, while the latter is anabolic, directing energy inwards where it is stored up. When these two are distributed to the same structure their action is always antagonistic, and when one is stimulated the other is inhibited. The rhythm of life largely depends on the fluctuating balance between these two. The parasympathetic plays the chief part in the digestion and assimilation of food, the sympathetic spends the energy thus derived. In sleep the parasympathetic gains control, and the arrest of external manifestations of energy lasts until the balance is restored in favour of the sympathetic, when the subject awakens ready to expend energy again.

Each of these great divisions co-operates with a group of endocrine glands—the sympathetic with the adrenals, thyroid and pituitary, the parasympathetic mainly with the glands of the digestive organs and their annexes. Possibly the parasympathetic co-operates also with the parathyroids and some lymphoid structures, but this is too controversial a matter to consider now.

My next point is to remind you that as special cells were of necessity set apart for reproduction as soon as the protozoon evolved into a multicellular organism and even before the latter developed a nervous system, it is only to be expected that a close relationship should persist between the gonads and the primitive chemiotactic mechanism now elaborated into the endocrine glands. And since the sympathetic nervous system entered into a defensive and offensive alliance with the endocrine glands, a basic tripod came to be formed which was entrusted with the duty both of the preservation of the individual and the continuity of the species. Their structural association is indicated by such facts as the common origin of the adrenal cortex and the interstitial cells of the gonads from the Wolffian body, and the development of the thyroid from the uterus of the Palaeostracan ancestor. Their close association is shown in disease as well as in health and is reflected in many psychoneuroses. Disease is not likely to manifest itself in one limb of this tripod for long without affecting all three.

To get a general conception of the principles of internal secretion it is necessary to start from the premise that the development of each individual recapitulates, briefly and with modifications, the history of the race. And it is helpful to remember that while life has been present on the earth for millions of years, man did not appear more than a comparatively few thousand years ago. Every time an individual repeats the history of the race he does it more easily as the result of practice. Thus it happens that the foetus in nine short months of pre-natal life recapitulates the history of millions of years, while his longer infantile life only repeats the history of a few thousand years. That even an adult may speedily revert to the instincts and habits of a cave man the war has abundantly shown. Later veneers of civilisation are easily cast aside.

Now the most primitive forms of life multiplied by simple fission. The unfertilised ovum is the nearest approach to the primordial cell that we know. Like the primordial cell it starts to divide by simple fission, forming two polar bodies. Millions of years ago simple fission was found inadequate for a complex animal, yet every ovum starts on this course till it is abruptly brought up by the consequent exhaustion of its powers of growth. But when fertilisation has remade its nuclear network a tremendous impetus is given to growth. When growth is expressed as a fractional increase of body weight it will be found that its curve continuously diminishes from fertilisation onwards. In other words, the impetus thus derived gradually wears itself out. A new life may be compared to a projectile travelling with a constantly diminishing acceleration. But unlike an ordinary projectile it is supplied with intrinsic regulators, capable of increasing or diminishing its velocity. These regulators are the two groups of endocrine glands and their associated nervous mechanisms. In the first few years of life the original impetus is so enormous that a brake is needed—which seems to act through the thymus. By seven years of age this brake is needed no longer, and should it continue to be applied from any cause, infantile features persist. With the aid particularly of the thyroid and pituitary, active growth continues until puberty gives another twist to the mechanism from the active development of another set of glands—a new position of equilibrium has to be found. With adult years a part of the energy is diverted from growth of the individual to providing a supply for the next generation; and again the regulators have to provide a new adjustment. Another jolt—often a violent one—is given to the mechanism by the climateric, and yet a new position of equilibrium has to be acquired. From this point on, the dying down of the initial velocity is marked; the accelerating thyroid seems to die down before the sedative parathyroid; calcium fixation goes on unchecked, therefore; the intercostal cartilages grow rigid, the chest becomes emphysematous, greatly diminishing the bodily activities by restricting respiratory exchange, the arteries become calcareous, diminishing the blood flow to every part of the body, while childish and even infantile characters may reappear as the organism slows down for the terminus.

This may be considered the normal course of events. That everybody should ultimately only die from senile decay is the goal of medicine. But apart from violent death the regulators may become worn out with consequent increase of friction to the mechanism.

Invasion by bacteria and their toxins may prematurely exhaust the endocrine glands, or endogenous poisons may produce a similar effect; metabolism becomes balanced on a razor edge, the sport of every wind that blows. Nervous shocks and strains excite a reaction of the sympathetic nervous system and, through it, of its associated chain of endocrine glands, with consequent exhaustion of them. And these two sources of endocrine exhaustion may interact, so that a psychic conflict may be produced because the body cannot adjust itself to a difficult environment largely because of an endocrine deficiency. Thus the two newest methods in medicine, psychotherapy and endocrinology, become not opposed but different aspects of the same problem. Or a body may start out ill-equipped with a supply of endocrines, so that its growth curve suffers a steep descent, as in the rare condition progeria, where senility comes on in childhood and the patient dies "an enfeebled old dotard of five." In dementia praecox we probably have a mixture of such causes at work —an atavistic reversion in bodily structure, as shown by the monkey-like hands; a gonadal deficiency, with a consequent persistence of an infantile outlook, hence a total failure of adjustment to the conditions of adult life; the mind defensively withdraws itself from its environment, and consequently undergoes rapid involution.

I wish next to call your attention to some remarkable and until recently unsuspected consequences which flow inevitably from the insulation of the central nervous system. This insulation also affects the cerebral blood vessels which are remarkably impermeable to drugs and toxins as long as they retain their integrity. How then do bacterial infections produce fever? The old conception of their stimulating some heat-regulating centre in the brain becomes untenable. Fevers are known to be followed by changes in the adrenals and thyroid, but Cramer has been able to show that anything which calls for increased production of heat definitely increases the secretory activity of these glands. Mere exposure of a mammal, though not of a cold-blooded animal, to a low temperature will effect this. The injection of the drug known as T.H.N. .will produce similar changes together with all the phenomena of heat-stroke and only exposure of the injected animal to cold will prevent a fatal issue. He has found similar changes in hyperpyrexia and to a less degree in all fevers. He regards the heat regulation of the body as mainly effected peripherally, and points out what a profound effect climate must therefore have on the endocrine glands. Indeed, when one compares the brain, rigidly shut off in its bony box, with the peripheral apparatus in the skin, possessed of sensitive end-organs, responsive blood vessels and sweat glands, together with the power of acquiring protective pigment, the case for a peripheral regulation of the temperature becomes so plausible as to cause wonder at its being overlooked so long. This was, no doubt, because it was difficult to see how sufficient co-ordination could be obtained, as long as the close ties between skin, sympathetic nervous system and endocrine glands were not appreciated. Leonard Williams some twelve years ago called attention to the influence of climate in moulding racial character through the endocrine glands, but his conception was too much in advance of current medical thought then, to receive the attention it merited. He pointed out that not only are the differences between the white man and the black, between Asiatics and Europeans, between the Latins and the Saxons admittedly and even obtrusively climatic in origin, but that modifications through climate can still be seen at work. He says: "In illustration of the last point I need only mention the fair skin and the red hair which long residence in northern climes has conferred upon some Jewish families, and the stereotyping by the climate of the North American continent of the descendants of its widely dissemblant annual European recruits into the hatchet-shaped face and wiry frame of the Red Indian aborigines." He suggests that the skin may be compared to a sensitive plate, stimulation of any portion of which will produce reflex activities in some distant organ and he regards the formation of cutaneous pigment as protective against such stimulation becoming excessive. The distant organs mainly affected in this way he believes to be the endocrine glands, and it is obvious that the adrenals, for instance, play an important part in the pigmentary changes in the body. Recent observations show the pituitary must share directly in this since tadpoles that had the anterior lobe of that gland removed became albinos. The unadaptability of albinos to climatic changes is well known. This is an instance of the way in which the theory of internal secretion preceded the facts, but now the facts are accumulating in support of the theory. At the time the theory was put forward the close association between the sympathetic-endocrine system and the higher levels of the nervous system was not sufficiently recognised to make it acceptable. But I think we are now justified in saying that climatic environment can modify our psychic "make-up" through the endocrine glands.

We may extend to all the endocrines McCarrison's statement that the thyroid gland is affected alike by toxic, nutritional and psychic factors, and is particularly likely to be injuriously influenced if more than one such factor is overtaking it. The influence of toxins can be more precisely understood now that Cramer has demonstrated the mechanism. His work also explains how a sympathicotonic reacts vigorously to infection, whereas a vagotonic does not, and, indeed, shows an abnormal sensitiveness to many foreign proteins, whether bacterial or not. Thus the same toxin may excite asthma in the latter type and excessive fever followed by an exhaustion neurosis in the former.

That a prolonged fever may be the starting-point of a psychoneurosis has long been known and can now be explained. This is naturally more likely to occur in one who previously showed some endocrine weakness.

Thus I saw a man of 38 in consultation whom I found to be suffering from paratyphoid fever. After this he developed an extraordinary anxiety neurosis. I thought that in addition to the hypoadrenalinism induced by the infection there was a strong psychic factor, for which I referred him to Dr Crichton Miller. He reacted to every obstacle or disability like an infant in the presence of an omnipotent mother. The mother substitute in this case was his sister. He could not cast aside childish trammels, but had been able to conceal this psychic disability until the toxic factor had lowered his endocrine resistance. Psychotherapy produced a dramatic improvement in his symptoms.

The nutritional factor would seem to be chiefly associated with lack of vitamines which, as McCarrison has shown, causes enlargement of the adrenals and pituitary while causing some atrophy of the other endocrine glands. In pellagra we have a striking example of a deficiency disease producing actual structural changes in the adrenals and sympathetic ganglia and leading to mental deterioration. In this connection it is of great interest to note that pellagra is much more likely to affect defeated than victorious soldiers, showing the influence of depressing emotion in permitting a disease directly due to lack of assimilable protein to obtain its hold on the endocrine system. Whereas toxic and nutritional influences play chiefly on the glandular part of the apparatus, psychic factors naturally act primarily on the nervous part; though ultimately both parts will become affected, whichever is involved first. It is to fear, pain and rage that the sympathetic particularly reacts since these are the stimuli which normally lead to those violent motor responses for which sympathetic action prepares the way. Rage, as McDougall has shown, is particularly excited when other primitive emotions are baulked of their expression. That pain is a developed phase of all primitive sensation is highly probable, as Trotter has shown, and I think a good case could be made out for regarding fear as the intensified form of the primitive emotion that leads either to immobility, i.e. the "shamming dead" reflex through the parasympathetic, or the violent response by flight through the sympathetic. In the civilised state the response appropriate to primitive man has often to be repressed. Such repressions are particularly likely to be necessitated when the great instincts of self-preservation, reproduction and gregariousness which relate respectively to the life of the individual, of the species and of the community come into conflict with one another. The effect of this repression may show itself at any of the three great levels of the nervous system, at the psychic level as a phobia or an obsession, at the sensori-motor level as a paralysis, contracture, tic or paraesthesia, or at the sympathetic level in some cardiac or digestive neurosis, or in some endocrine disease. The autonomic level of the nervous system works through the endocrines; just as the psychic level expresses itself through symbols (Smith Jelliffe). Just as in the psychoses the symbols acquire an abnormal significance, so in vegetative neuroses the endocrine glands behave abnormally.

One of the general phenomena of disease is dissociation. Normally the sympathetic should act as a whole, but in emotional glycosuria we have a good example of dissociated action affecting entirely or mainly carbohydrate tolerance. The adrenals, thyroid and pituitary are alike stimulated by the sympathetic and lower carbohydrate tolerance. The pancreas is innervated by the parasympathetic and raises carbohydrate tolerance. When the former group is stimulated the latter is inhibited, hence any of the emotions which excite the sympathetic will tend both directly and indirectly to flood the blood with sugar. If this is not utilised for muscular energy and heat production it is liable to overflow into the urine.

The influence of excitement and emotion in causing glycosuria is well recognised. It is commonest in Jews, a notoriously emotional race. When stocks go down in New York, says Crile, diabetes goes up. Temporary glycosuria occurred in a number of men who merely watched a football cup tie without participating in it. Glycosuria has been, unfortunately, comparatively common in young officers entrusted with heavy responsibilities during the war. Singer and Clark have recorded two cases in which there was alternation between glycosuria and the exhibition of mental symptoms, as if the emotional discharge asserted itself either at the metabolic or the psychic level but not at both.

The thyroid gland provides us with some of the best examples of the association between the endocrines and the psychoneuroses, for here the influence of the basal tripod is clearly revealed, and toxic, nutritional and psychic factors alike may be seen at work. The thyroid tends to enlarge at puberty, marriage and in pregnancy; and alimentary toxaemia has been shown to play a definite part in its pathological enlargement. Sympathetic stimulation has also been proved to be followed by thyroid enlargement, as in Cushing's experiments on the production of Graves' disease in cats by suturing the phrenic nerve to the cervical sympathetic so that the thyroid was stimulated by each respiration. I am convinced that it is a mistake to look upon Graves' disease as purely a primary hyperthyroidism; there is always an underlying sympathetic irritation, which produces hyperthyroidism which in turn increase the sympathetic response, thus establishing a vicious circle.

Crile says: "I have never known a case of Graves' disease caused by success or happiness alone, or by hard physical labour unattended by psychic strain or to be the result of energy voluntarily discharged." My own belief is that if a distressing emotion has a matrimonial origin it is particularly likely to induce Graves' disease for here each limb of the basic tripod is involved.

The fact that a psychic factor has not been found does not mean that it is not present. Thus in a young man suffering severely from this disease in hospital, I was for a long time unable to discover that factor. In the course of routine examination I had found that he had hyperglycaemia, without glycosuria. One day however he passed sugar. The previous day was visiting day, and the Sister of the Ward told me she had detected in one of the visitors a source of grave psychic conflict.

The effect of fear in producing hyperthyroidism was well shown during the air-raids on London. Indeed the air-raids were almost an "acid test" of race. An uncontrollable impulse to flight from London or into the tubes was almost diagnostic of Semitic origin. More self-controlled people, who nevertheless suffered acutely, repressed their impulses from the motor to the vegetative level and received their reward in hyperthyroidism, amounting in some cases to Graves' disease. Similar outbreaks of this disease followed the San Francisco earthquake and the Kishineff massacres. That Graves' disease, like sympathetic stimulation, is characterised by exaggerated katabolism is proved by recent studies on basal metabolism, which then shows an increase up to 40 per cent. of normal. Whereas in hypothyroidism basal metabolism may be reduced to 40 per cent. of normal. Once the thyroid has been started on this evil course through sympathetic stimulation the emotional agitation is kept up at such a level that psychoneuroses are the rule, and actual insanity is far from uncommon. In the same way fear and anxiety keep up a sympathetic stimulation of the adrenals. If this is met by a hypertrophy of the gland, high pressure symptoms are apt to develope, but if not thus met some degree of exhaustion ensues, as in many war neuroses and other functional states characterised by vasomotor instability, low blood pressure and myasthenia. And it was frequently observed that so-called "disordered action of the heart" was much more likely to occur in soldiers who had recently suffered from an infective condition, which would tend to prevent the adrenals from rising to an emergency.

I hope that I have shown justification for the statement that endocrine glands being influenced by toxic, functional and psychic factors, may, alike, cause or be affected by a psychoneurosis. It is clear that whether the change starts in the gland or in the emotional nervous system, a vicious circle is soon set up. But just as the sympathetic nervous system is closely associated with the endocrine glands outside the central nervous system so it is inextricably intertwined with the higher levels inside it. Hence, as Stragnell puts it: "No endocrine inferiority can be present without a psychological change, a retreat or a compensation." Or, as Pottenger says: "The great number of disease processes which express themselves in the vegetative structures (*i.e.* autonomic nervous system and endocrine glands)...either interfere with the mechanism of defence or the providing of the organism with sustenance...and the individual who has an abnormal vegetative balance wages his struggle for existence with a handicap.... The ultimate effects are distributed to every system of the body, vegetative, voluntary and psychic. Between the vegetative and psychical systems a vicious circle is established, and each harmful stimulus in the one influences the other. Every disease process of a serious nature, therefore, must have a psychical side to it."

I have not attempted to discuss complex polyglandular syndromes nor the details of the resulting symptoms. I am content if I have been able to indicate the broad biological considerations which seem to me to underlie the influence of the endocrines in the psychoneuroses.

THE QUESTION OF THE THERAPEUTIC VALUE OF "ABREACTION."

BY C. G. JUNG.

IN the discussion of a paper by William Brown concerning "The Revival of Emotional Memories and its Therapeutic Value," William McDougall, writing in this *Journal* (Medical Section), vol. I, part 1, gave expression to some important considerations which I wish to underline. The war-neuroses with their eminently traumatic aetiology have revived the whole general question of the trauma theory of neurosis. During the years of peace this theory was rightly held in the background of scientific discussion, since it is an inadequate conception of neurotic aetiology.

Breuer and Freud were the originators of the theory. Freud, who carried on the investigation of the neuroses, soon adopted a deeper view which took the real neurotic origins more into account. In by far the greater number of ordinary cases of neurosis there is no question of a traumatic aetiology.

In order to create the impression that the neurosis is derived from a traumatic moment, inessential, secondary occurrences must, for love of the theory, artificially be brought into prominence. As a rule these traumata, when they are not mere artefacts of medical phantasy, or from other reasons dependent upon the compliancy of the patient, are secondary events, consequences of an already existing neurotic attitude. The neurosis is, as a rule, a morbid, one-sided development of personality, arising from very slender, indeed ultimately invisible beginnings, which can be followed back, as it were indefinitely, into the earliest years of childhood. An arbitrary judgment could alone decide where such a neurosis really begins.

If its determination were shifted back into the intra-uterine existence, thereby involving the psychical and physical disposition of the parents at the time of pregnancy and conception—a view which in certain cases seems not at all improbable—such a standpoint would, in any case, have more justification than the arbitrary selection of a definite point of neurotic origin in the individual life of the patient.

Clearly, in the handling of such a question, one must never remain held by the surface appearance of the developed symptoms, even when the patient, as well as his family, synchronises the beginning of the neurosis with the first manifestations of declared symptoms. A more thorough investigation will, without doubt, be able to demonstrate the presence of a morbid tendency of some kind, existing long before the appearance of clinical symptoms.

These obvious facts, long familiar to every specialist, pushed the trauma theory into the background, until through the war a veritable high-tide of traumatic neuroses was released.

If we discriminate among the number of war neuroses all those numerous cases where a trauma—an undoubted violent shock—impinged upon an already established, previous neurotic history, there remain not a few cases where, if some sort of neurotic disposition worthy of mention really existed, it was so insignificant that without trauma an actual neurosis could hardly have resulted. In these cases the trauma means more than a mere moment of release. It is actually causative in the sense of the *causa efficiens*, especially when one includes the unique psychical atmosphere of the battle-field as an essential factor in the reckoning.

These cases present a new therapeutic problem which seems to justify a harking-back to the original *Breuer-Freud* method just as much as to the theory; for the trauma is either concerned with a single, definite and violent impact, or with a complex of ideas and emotions which can be directly compared with a psychic wound. Everything that touches this complex, however slightly, excites a violent reaction, an actual emotional explosion. One can easily, therefore, arrive at the idea of representing the trauma as a complex of high emotional charge and, because at first glance this enormously effective charge seems actually to be the disturbing and pathological cause, one can, in consequence, postulate a therapy which most thoroughly seeks to release this charge. This very simple as well as logical standpoint apparently agrees with the fact that abreaction, i.e. the rehearsed experience of the traumatic moment, in the form, for instance, of an affectively animated repetition in the waking or hypnotic state, has often a favourable therapeutic effect. The mechanism is familiar to the popular mind: everyone knows that a man feels an almost compelling need to recount a vivid experience again and again until it has finally lost its affective value. It is indeed proverbial: a man lightens his heart with a confession, "what filleth the heart, goeth out through the mouth." This is nothing else but an unloading which gradually depotentiates the affective value of the traumatic experience until it distresses no longer.

This conception, apparently so clear and simple, is unfortunately—as McDougall rightly objects—like so many other equally simple and therefore delusive explanations, inadequate; such views must then be fanatically and dogmatically maintained, since they cannot hold their ground in the face of experience. Again McDougall is right when he points out that there occur a not inconsiderable number of cases where abreaction not only is no use but is actually harmful.

In face of this, it is possible to take the standpoint of the injured theorist and say, one has never claimed that the method of abreaction is a panacea, and in any event refractory cases occur with every method.

In answer to this, I would like to point out, that it is precisely in a careful study of the refractory cases that one gains a more illuminating insight into the method or theory in question, than through an investigation of its "successes." For it is just such cases that disclose where the theory is weak. Naturally the efficacy and justification of the method is not thereby disproved, but at least the way is prepared for an improvement of the theory and, indirectly, of the method.

McDougall, therefore, has laid his finger on the right spot when he argues that the essential factor is the dissociation of the psyche and not the existence of a high-tension affect, and hence the essential problem in the therapy is the integration of the dissociation and not the abreaction. This argument considerably advances the discussion. It entirely corresponds with our experience that a traumatic complex creates a dissociated condition of the psyche: it is removed from the control of the will and therefore possesses the quality of psychical autonomy.

Its autonomy consists in this, that it manifests itself independently of the will and even in frank opposition to conscious tendencies, thus forcing its existence tyrannically upon consciousness. The explosion of the affect invades the individuality completely, pouncing upon it rather like an enemy or a wild beast. Frequently I have observed the typical traumatic affect represented in the dream as an enemy or as a wild and dangerous animal—a striking image of the autonomous nature of the split-off affect.

Considered from this angle abreaction appears in an essentially different light: it is an attempt to re-integrate once more into consciousness the complex that has become autonomous. The complex is gradually included as an accepted content of consciousness, mainly through the traumatic situation being simply lived over again, either once or repeatedly.

It is of course questionable, to my mind, whether the thing is actually so simple or whether there may not be other circumstances essential to the process. It must, above all, be emphasised, that it is not merely the rehearsal of experience that possesses an unconditional curative effect, but the rehearsal of experience *in the presence of the physician.*

If the healing effect depended merely upon the rehearsal of experience, abreaction could then be performed by the patient alone as an isolated exercise and would require no human object to which it is applied. The intervention of the physician is, however, absolutely essential. One can easily understand what it means to the patient, when he can confide his experience to an understanding and sympathetic doctor. His consciousness finds in the doctor a moral support against the unmanageable affect of his traumatic complex. No longer does he stand alone against these elemental powers, but a trustworthy man reaches out a hand, lending him moral aid in the battle against the tyrannical oppression of the uncontrolled emotion. By this means the power of his integrating consciousness is reinforced until he is able, once more, to bring the rebellious affect under the control of consciousness. This indispensable and absolutely essential influence of the physician may, if preferred, be described as suggestion.

I would rather speak of it as the significance of the human interest and personal devotion of the physician; these belong to no method nor will they ever become one, for they are moral qualities, incontestibly of the highest importance for all methods of psycho-therapy, not for abreaction alone. *The rehearsed experience of the traumatic moment can re-integrate the neurotic dissociation, only when the conscious personality of the patient is so far reinforced by the relationship to the physician, that he is consciously able to bring the complex that has become autonomous once more under the control of the will.*

These are the conditions of the curative value of "Abreaction." But the curative effect does not solely consist in the discharge of the affective tension; it depends, as McDougall shows, much more upon the resolution of the dissociation. We now find that those cases, where "abreaction" has a negative result, assume a different aspect.

Without the co-operation of the other conditions just mentioned, "abreaction" does not alone resolve the dissociation. When the autonomy of the complex is not re-integrated through the rehearsal of the trauma the relationship to the physician can so raise the level of the patient's consciousness that he is able to overcome the autonomy of the complex and to assimilate it. But it easily may happen, either that the patient has a particular resistance against the doctor, or that the doctor has not a sufficiently right attitude to the patient. In both cases the method breaks down.

It is self-evident that the cathartic method (abreaction), when dealing with ordinary neuroses, which are only in a minor degree traumatically determined, will, as a rule, meet with poor success. Since, in general, it has nothing whatever to do with the nature of the neurosis, the schematic application of the method is, in such cases, quite ludicrous. Even when apparently partial success is obtained it can have no more significance than would the success of any other method that admittedly had nothing to do with the nature of the neurosis.

The success is due to suggestion, it is usually of very limited duration and clearly accidental. This success arises always out of the transference to the physician, which is established without too great difficulty if only the physician has an earnest belief in his method. Because it has just as little to do with the nature of the ordinary neurosis as, for instance, hypnosis and other such remedies, the cathartic method has, with only a few exceptions, long been abandoned and replaced by psycho-analysis.

It is just where the cathartic method has its blind spot that the analytical method is firmly established, viz. *in the relationship to the physician*. It matters little that, even to-day, the view prevails in many quarters that analysis consists mainly in the "digging-up" of the earliest childhood complex in order to pluck out, as it were, the evil by the root. This is the after-effect of the old trauma-theory. Only in so far as they hamper present adaptation, have the historical contents any real significance. The therapeutic effect of the minute and scrupulous pursuit of all the infantile phantasy-roots depends not so much upon these relatively inessential demonstrations as upon the labour the physician gives himself to enter into the patient's psyche, whereby establishing a psychologically adapted relationship. For the patient is suffering precisely from the absence of such a relationship. Freud himself has long recognised that the transference is the alpha and omega of psycho-analysis. The transference is an effort of the patient to establish a psychological rapport with the doctor. He needs this relationship so that he may thereby master his dissociation. The slighter the rapport, i.e. the less substantial the mutual understanding, the more intensely will the transference be fostered and striven for and the more sexual will be its form.

The attainment of the goal of adaptation is of such vital importance to the patient that sexuality intervenes as a function of compensation, in order to consolidate a relationship that can no longer be won by the ordinary means of mutual understanding. Under such circumstances the transference can thus become the sternest obstacle to a successful treatment. That such vehement sexual transferences to the doctor are especially frequent in the sexually-orientated analysis is not surprising, for a too exclusive concentration of medical interest upon the sexual motive is extraordinarily liable to bar the way of understanding in the crudest fashion for many neurotic cases. An exclusively sexual interpretation of dreams and phantasies is a shocking violation of the patient's psychological material: it is by no means merely infantile-sexual phantasy that he produces, but also a creative accomplishment, which shall make a way for him fully to emerge out of his neurosis. That decent way out is barred to him through the exclusively sexual interpretations. The physician now is the only certain point in a wilderness of sexual phantasies, so that finally nothing else remains but to cling to him with a convulsive erotic transference, unless indeed he prefers to sever himself from his physician in hatred.

In both cases the result is a spiritual devastation. It is especially deplorable under the circumstances, because the psycho-analytical physicians do not in the least desire such an effect; they nevertheless frequently bring it about, through their blind allegiance to the sexual dogma. Naturally, the sexual interpretation is simple and inexpensive of ideas: it concerns itself at the most with a handful of simple basic elements which recur in numberless variations.

One always knows beforehand where the whole matter will finally emerge, "Inter faeces et urinas nascimur" remains certainly an eternal truth, but a sterile, a monotonous and above all an unsavoury truth. It is of absolutely no value that every finest striving of the soul should for ever be reduced back *usque ad uterum*; rather is it a gross offence because such a view, instead of building it up, eventually destroys the psychological understanding. Their need of the psychological rapport is, above all, what really concerns the neurotic patients, for it enables them in their dissociated state to orientate themselves ever afresh to the psyche of the physician. It is by no means a simple matter, this relationship to the human object; it is something that can be built up only with great pains and scrupulous awareness. Though of great interest historically and scientifically, the continual leading-back of all projections—and the transference consists of projections—to their origins, serves nothing in the building-up of an attitude of adaptation to life; for it resolves once again to its elements, every attempt on the part of the patient to establish a relationship, thus destroying it.

If, in spite of this, the patient achieves a certain fitness for life, it can only be brought about by the destruction of many moral, intellectual and aesthetic values, whose loss in a human character one can only deplore. For these are things which absolutely demand and must be granted integrity. Irrespective of this principal offence there is the perpetual reduction, the brooding over the past and the ever-backward glance to things which cannot now be altered; that morbid tendency with so many neurotics to seek always in the past, among their parents, etc., the cause of their inferiority.

But such a minute research into all the ramifications of minor determinants will affect the existing inferiority as little as the present social conditions could be ameliorated by an equally painstaking investigation of the causes of the great war. It is here that the moral accomplishment of the individuality takes its place.

To declare in general that no reductive analysis is needed, would certainly be short-sighted, indeed as unintelligent as to deny all value to the research into the causes of the war. A wholly necessary and even indispensable foundation for a further synthesis is created when the physician gains the deepest possible insight into the origin of his patient's neurosis. But the new synthesis must be definitely begun. As a result of the historical examination, i.e. through the reductive analysis, the patient is removed from adaptation to the present situation through being led back, as it were, to his beginnings. The psyche naturally seeks to make this loss good by a special strengthening of the hold upon the object, generally of course upon the doctor, but sometimes upon someone else at the same time, as, for instance, the husband, or a friend who figures as the doctor's counter-pole. Partly, this is an opportune balancing of the one-sided transference, but partly, as may easily be understood, it is a troublesome obstacle to the progress of the work. The intensified tie to the physician is a compensation symptom for the defective relationship to the present reality. It is this tie that one describes as "transference."

The phenomenon of transference is inevitable in every fundamental analysis, for it is absolutely imperative that the physician should get into close touch with his patient's path of psychological development. Thus only can the physician take into himself the psychological contents of his patient so that his reactions gain an effective contact. One could say that in the same measure as the doctor receives into himself the intimate material of the patient, he himself enters as a figure into the psyche of the patient. I say "as a figure," by which I mean, that at first he is seen by the patient not at all as he is, but more or less he takes on the rôle of those individuals who held significance in the patient's previous history. The physician becomes associated in the patient's psyche with those memory-images because he makes him divulge all his most intimate material. He becomes burdened by these images.

The transference consists therefore of projections which stand in the place of a true psychological relationship. Thus the projections make possible a kind of apparent relationship which, however, at a moment when the patient's already existing failure of adaptation is artificially intensified through his analytical removal into the past, is very important. Hence a sudden rupture of the transference is always accompanied by consequences in the highest degree unpleasant and even dangerous, for it maroons the patient in an impossibly isolated and relationless condition.

Even should the transference projections be treated as *mere* projections and be analysed back to their origins—and every form of projection can be thus dissolved and done away with—nevertheless the claim on the relationship still holds good and must be conceded, for without the relationship the patient falls into an absolute void.

He must find the relationship to an object in the living present, for without it he can never adequately fulfil the demands that adaptation makes upon him, or at least, only in a very inferior way. Regardless then of all reduction, his claim will still turn towards the doctor, not indeed as an object of sexual desire, but rather as an *object of human relationship*, of the relationship of one individuality to another, wherein each man is guaranteed his proper place. So long as the projections are not all consciously recognised, such a relationship naturally cannot be attained. The projections must, therefore, before all else, be reductively analysed, provided, of course, that the legitimacy and importance of the underlying claim to individual relationship is constantly borne in mind.

Once the projections are recognised as such, that rapport which one terms the transference is at an end. Here the transference ceases and here the problem of individual relationship begins. To this point every student of analysis may come who has perused the literature on the subject and amused himself in dream-interpretation and unearthing complexes in himself and others. But beyond this point none may go but that physician who either has himself undergone a basic analysis or who brings such modesty and such passion for truth to the work that he can also analyse himself through his patient. Let him who has no wish for the former and cannot achieve the latter not touch analysis; for he will not endure the test, even though he preserve his lamentable conceit for authority.

In the last resort his work is intellectual bluff; how, indeed, can he help his patient out of his morbid inferiority when in the recognition of individual superiority he himself is the first to be found wanting? How can there dawn upon the patient the possibility of relinquishing his roundabout neurotic ways, if the physician, playing hide-and-seek with his own personality, cannot, through fear of his own inferiority, relinquish his convulsive clutch at an appearance of worth, authority, competence, superiority, etc.?

The touch-stone of every analysis that has not either terminated in some preliminary stage with a more or less satisfactory practical result or actually come to a standstill without result, is individual relationship, which corresponds to that psychological situation where the man in the patient confronts the man in the doctor upon equal terms, and with that merciless criticism which he inevitably learns from the doctor in the course of his treatment.

The individual relationship is the compact which replaces the transference with its often slavish and humanly degrading dependence, and which makes, for the patient, the first step into a highly valued human existence possible. The individual relationship is for the patient an indispensable bridge; it must serve as a proof to him that his unique personality not only is acceptable but is indeed accepted, and that he himself is now in a position to build up a fully adapted relationship. Naturally, when the physician tries to conceal his personality and his extraordinarily great personal influence behind a method, thus conceding himself the power to scold without question, this can never be the case. So long as this factor is not given its full weight in the reckoning, the method is not so very different from suggestion; the results will also correspond. Instead must the patient have the right of freest criticism and the feeling of human equality of right.

All that I have here said goes to show that, in my opinion, analysis makes far higher claims upon the mental and moral nature of the physician than does the application of a method acquired by routine. And the advancement of the healing effect lies primarily in this higher and more personal achievement of the physician.

But, if one concluded from this that little or nothing lay in the method, I would consider it an unpardonable misapprehension of my meaning. A merely personal sympathy could never provide the patient with that objective understanding of his neurosis which makes him, in a sense, independent of the physician and which erects a counter-influence to the transference depicted above.

For the objective understanding of the disease, just as for the building-up of a relationship, Science is needed, and not indeed some purely medical knowledge which embraces only a quite limited range, but a general knowledge of every side of the human psyche. The psychological treatment must not only destroy an old, morbid attitude, it must also build up a new, sound attitude. But for this a reversal of vision is needed. Not only shall the patient see from what beginnings his neurosis arose, he shall also be able to see towards what justifiable aims his psychological tendencies are striving. One cannot, as though it were a foreign body, simply extract the morbid element, lest one removes with it an essential piece which, after all, is destined to be lived with. This piece must not be weeded out, but must be transformed till it attains that form which can be included in a way that is meaningful to the whole of the human psyche.

EXPRESSION OF EMOTION IN CASES OF MENTAL DISORDER AS SHOWN BY THE PSYCHO-GALVANIC REFLEX.

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(FROM WORK CARRIED OUT AT CAMBRIDGE
FOR THE MEDICAL RESEARCH COUNCIL.)

(1) *Theoretical considerations as to the meaning of the term 'emotion.'*

THERE is at present no generally accepted definition of the term emotion amongst psychologists, so that it is first necessary to clear the ground as to the meaning we are going to assign to the term. The meaning as popularly understood by the man in the street, as given for instance in the dictionary, is 'a feeling, agitation of mind.' Such a meaning is not in accord with the definitions generally put forward by psychologists. Professor James Ward says: "It has been usual with psychologists to confound emotions with feelings because intense feeling is essential to emotion. Strictly speaking however a state of emotion is a complete state of mind, a psychosis, and not a psychical element, if we may say so"[1]. It has been emphasised also by Professor Stout and at greater length by Mr Shand that emotion does not consist merely in feelings. Shand holds that an emotion is a self or microcosm of the entire mind, including cognitive and conative attitudes as well as the feeling attitude of a peculiar kind. "Emotion," says Shand, "may be used to denote all those forces that are alternating in our minds as joy and sorrow, anger and fear at all degrees of intensity at which they can be felt and recognised"[2]. For Shand, then, emotions are forces and form systems. He distinguishes three parts of the system of the emotion, the emotion itself as subjectively experienced, the processes connected with it in the organism, and its outward expression and modes of behaviour. Moreover he assumes that certain instincts—he defines an instinct "to be an inherited disposition both to be excited by certain stimuli and to respond with a specific kind of behaviour or expression to such stimuli"—are parts of the systems of primary emotions. The only objection to this way of looking at the question is that the term emotion is used by Shand in two different senses,—one is apt to get confused as to whether at one time emotion as a system of forces is referred to, and at another emotion as the part which we feel, the part which is in consciousness and is accessible to introspection.

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[1] J. Ward, *Psychological Principles*, 1918, p. 276.

[2] A. F. Shand, *The Foundations of Character*, 1914, p. 178.

In contrast to Shand, Professor McDougall regards the primary emotions as parts of the systems of instincts and defines emotion simply as "the affective aspect of an instinctive process"[1]. The difficulties involved in accepting this view have been discussed fully by Shand, and more recently the observations of Professor Lloyd Morgan upon the similarity in the type and intensity of the response in birds at different emotional periods[2] would seem to support Shand's objections. If an emotion is not the affective aspect of the excitement of an instinct, what is that which corresponds most closely to an instinct in consciousness? To this Shand answers—an impulse, and consequent on it the sensations that accompany the subsidiary motor response.

Another view has been put forward by Dr Drever, who holds that the affective aspect of an instinct consists in 'instinct-interest.' "If in any way this normal prosecution of the instinct-interest is checked, tension will arise, a tension in feeling which is emotion"[3]. Drever admits the objections to his theory, which does not appear to account for the origin of the 'joy emotions,' but he gets over this difficulty by pointing out the kinds of circumstance under which tension of feeling is likely to be produced. One of these is when the urgency of the impulse is such that action cannot keep pace with it. In the case of joy the satisfaction is itself stimulating and the situation, which satisfies, at the same time accentuates the impulse by further stimulation, so that the action cannot keep up the pace. Another kind of circumstance under which tension is said to arise is when there is no inherited provision for the precise reaction, which is appropriate to a particular situation, so that the greater the plasticity, the greater the delay in response and the greater the feeling tension or emotion. Drever's definition comes nearer than any other to the popular meaning of the term 'emotion,' and would seem to gain support from experiments on the psycho-galvanic reflex.

There is still to be considered the view which is upheld by the supporters of the James-Lange theory in a modified form, that emotion is

[1] W. McDougall, *Social Psychology*, 1914, 8th edition, p. 46.

[2] C. Lloyd Morgan, "Psychical Selection: Expression and Impression," *Brit. Journ. of Psychology*, 1921, XI. 206.

[3] J. Drever, *Instinct in Man*, 1917, p. 143.

simply the consciousness of the sum total of organic sensations and that it is nothing more than this. If the term 'emotion' is defined in Ward's or Shand's sense then it is obvious that the organic sensations cannot be the cause of the emotion, and, as Ward says, the theory is psychologically and biologically absurd[1]. But if the term emotion is restricted to subjective feelings then we have to admit that the organic sensations form an important part of the subjective experience.

Though we are often justified by our observation of behaviour in making the assumption that there is a definite connection between physical and psychical events as cause and effect, we are not justified in pretending to be able to decide by such observation alone which are the causes and which the effects. As Ribot says, "the study of the emotions from the point of view of pure psychology can come to no definite conclusion. Internal observation however subtle can only describe the internal fact and note its graduations; regarding the conditions and genesis of emotion it can give no answer; it can only seize a bodiless emotion, an abstraction"[2].

But that the organic sensations are not responsible for the whole of the subjective feeling experienced seems certain from recent psycho-physiological experiments[3]. And in addition to the objections which have hitherto been raised, a very serious objection, it seems to me, is the fact that the emotion is subjectively experienced before there is time for the visceral changes to occur. This objection does not hold good for muscular sensations, but it seems to be possible to elicit emotion in some subjects without any visible muscular movements, so that in such cases we can claim on the hypothesis of the James-Lange theory that most of the sensations should come from the skin and viscera, and it is on these that James relied most for his theory.

Now we know from our experiments with the plethysmograph and psycho-galvanic reflex that there is an average latent period in both of 2–3 seconds before the peripheral reactions are manifest, and that the subject experiences his feeling of emotion some time before these reactions occur. This objection is still more obvious in the case of the viscera. The secretion of the adrenal gland, which plays such an important part, according to Cannon, in the physiology of the emotions does not occur for some seconds—Cannon says: "the latent period of adrenal secretion when the splanchnic nerve is stimulated below the diaphragm is not longer than 16 seconds." And further Pavlov has shown that the latent period of the gastric psychic secretion is five minutes[1]. It seems most improbable that sensations due to organic changes could make themselves felt in consciousness as an emotion so long before any manifestation of such changes appeared at the periphery.

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[1] *Op. cit.* p. 275.

[2] Th. Ribot, *The Psychology of the Emotions*, 1911, 2nd edition, p. 93.

[3] See *American Journ. of Psychology*, 1919, vol. 48, p. 285.

There seems then to be no doubt as to the fact that some psychical excitement precedes the physical changes and that this is of a specific kind corresponding with different situations. But if we accept Shand's or Drever's views, can we say how much of this excitement is emotion, and how much is due to impulse or instinct-interest, and can we say that the true emotion only makes its appearance when the visceral sensations make themselves felt in consciousness?

An attempt to answer these questions involves us in the difficulty that apart from introspection we have no evidence as to this excitement, and we are led to ask another question—how far can we accept the outward manifestations as indicative of subjective feelings? It seems to have been more or less assumed by psychologists that the strength of the manifestations, in the absence of conventionalism and deceit, indicates the amount of feeling produced. Professor J. Ward, for example, writes: "The intenser the feeling, the intenser the reaction no doubt, whether it be smiles or tears, jumping for joy or writhing in agony"[2].

In contradistinction to this, the question I would ask is as to whether the so-called emotional or hysterical persons really feel any emotion at all. Are their emotions only artificial and their expressions simply mimetic? Can we in fact go further and apply these questions to healthy persons and say how far the muscular expressions are merely mimetic, and how far they really indicate the subjective experience of emotion?

James briefly referred to this point in a footnote: "I am inclined to think that in some hysteriform conditions of grief, rage, etc., the visceral disturbances are less strong than those which go to outward expression. We have then a tremendous verbal display with a hollow inside. Whilst the bystanders are wrung with compassion or pale with alarm, the subject all the while lets himself go but feels his insincerity, and wonders how long he can keep up the performance"[3]. Janet in his *Mental State of Hystericals* was of the same opinion, for example "their emotions which seem so violent are not just," and "there is very often but little real feeling connected with these loud cries and this great despair." Are James and Janet justified in their contention that these subjects experience little or no emotion and that the emotion in such cases is artificial? To this the psycho-analytical school would give a decided answer in the negative. For this school the inadequacy of the reaction is only apparent, the emotion is perfectly genuine but is overdetermined by displacement, and the hysteric is reacting in reality to an old situation which has been made significant for him by some bond of association aroused by the situation immediately responsible for the reaction. Allowing that this mechanism occurs more often than is generally recognised, there still remain a number of cases which cannot be explained by this process unless we so stretch the point that it loses all value as an explanatory assumption. In these cases it may perhaps be possible to hold with Janet that the emotion is artificial, if one restricts the term emotion to subjective feeling as James and Janet appear to do, for it is true at any rate, as my experiments show, that the visceral expression in these cases is very small or is even non-existent.

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[1] E. P. Cathcart, "Psychic Secretion," *Journ. of Mental Sci.* 1919, LXV. p. 180.

[2] *Op. cit.* p. 277.

[3] W. James, *Principles of Psychology*, 1890, II. p. 461.

In dealing with this question of expression we must first decide the relative values we are going to assign to the different manifestations. We know that in the so-called expression of emotion both the central and autonomic nervous systems play their part. That is to say, expression is partly by the contraction of voluntary muscles, 'muscular expression,' and partly by glandular secretions, contraction of involuntary muscles, vasomotor and visceral reactions, all of which I include under 'visceral expression.' And, whereas visceral expression occurs automatically and independently of any direct control, muscular expression on the other hand varies directly with the amount of voluntary control and can be entirely inhibited.

Now I would agree with Shand that an instinct may be excited without involving an emotion, but that an emotion is incapable of being excited without involving the excitement of some instinct. It would then seem necessary to distinguish how much of the consequent behaviour or muscular expression is due to emotion and how much to instinctive impulse, and how much of the subjective feeling is due to emotion and how much to the sensations set up by muscular reactions evoked in the carrying out of the impulse.

We must then allow that part of the muscular expression may be indicative possibly of subjective feeling, and that part may be certainly an instinctive reaction, the carrying out of the impulse, perhaps a 'pseudaffective reflex' as Sherrington calls it, released from inhibition. This view gains support from the experiments of Professor Sherrington on decerebrate cats. Sherrington describes in the decerebrate cat amongst other motor reactions some mimetic movements simulating expression of certain affective states, but he could never evoke such mimesis as might, had the cerebrum been present, have been indicative of pleasurable sensation. Pagano reports that in the dog, deprived of its cortical functions, he got mimetic expressions of both fear and anger[1]. And Goltz's dog also showed expression of anger without any signs of other emotions. Goltz argued from this that the other emotions seemed to demand higher nervous organisation than did anger. Observations on infants seem to confirm this view, for there do not seem to be any clearly defined expressions indicative of pleasure in the new born babe—laughing aloud, for example, did not occur in one of my children until the eighth week, whereas expressions of displeasure were certainly present at birth, and reflex starting at loud noises occurred during the first week. In reference to Goltz's argument as to anger Sherrington states: "Be that as it may, the retention of its expression by Goltz's dog indicates that by 'retrogradation' the complex movement of expression has in certain emotions passed into a simpler reflex act....The impulsive movement has in this case become an automatic reflex no longer necessarily combined with the psychical state whence it arose"[2].

The nerve centres of mimetic expression are said by some to have their seat in the optic thalamus, but as Sherrington points out various grades of mimetic expression exist, and some seem phylogenetically much older than others; observations on hemicephalic children and Sherrington's experiments in which part of the optic thalamus was removed point to the conclusion that in some reactions neither the forebrain nor midbrain are necessary. It seems justifiable therefore to make the speculation, as Head and Riddoch have done, that the 'flexion-reflex' and the 'mass reactions' in cases of traumatic lesion of the spinal cord are of the same nature as the mimetic expressions in decerebrate animals, that they are pseudaffective reflexes of a much earlier stage of evolution. And it might even be possible to speculate further, in conformity with Pierce Clark's views on epilepsy that the fit is a regressive phenomenon, and so ascribe the epileptic convulsions to the re-awakening of certain pseudaffective reflexes, much in the same way that Babinski's extensor response reasserts itself when cut off from the inhibition of the cerebral cortex by lateral sclerosis, though in order to uphold such a view it would be necessary to assume that the stimulus which sets up the reaction is also responsible for removing the inhibition.

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[1] *L'Année Psychologique*, 1914, p. 483.

[2] C. S. Sherrington, *The Integrative Action of the Nervous System*, p. 267.

These considerations point to the conclusion that muscular expression is no indication, at least as far as the coarser emotions are concerned, of the subjective feeling experienced, for it would seem to be justifiable to make the assumption that decerebrate animals do not in fact experience any such feeling. It is at least certain that the amount of muscular expression is intimately related to the strength of the cortical control which is brought into play. Given the same strength of subjective feeling the person with no powers of inhibition may give vent to an explosive outburst, whilst the one with a higher development of self control will give no outward expression at all, and in the same person the discriminative and inhibitory functions of the cortex vary from time to time, depending largely on physical factors, such as fatigue and the influence of hormones, endocrines, drugs, alcohol, etc. But it is also true that the muscular expression depends on the strength and duration of the impulse, so that Spencer insisted on "the general law that feeling passing a certain pitch habitually vents itself in bodily action and that nerve force takes first the most habitual routes." That is, that it expresses itself first in the voice and muscles of the face and hand. Spencer's law however would seem to be a one-sided explanation as it does not take into account the question of control, unless we agree to accept McDougall's drainage theory of inhibition. For we recognise that the first functions in the central nervous system to become deranged in mental disorders are those that have developed last from the evolutionary point of view, the higher centres involving the discriminative and inhibitory functions are affected first, and it would seem that Spencer's 'habitual routes' are the last to develop as methods of expression and are less under the influence of control.

It would appear then that the term 'emotional' as popularly used is incorrect. The persons to whom we ascribe this term are really persons who have little or no control over their muscular expression—they should rather be called 'impulsive.' The converse question as to whether emotion can be subjectively experienced without any muscular expression we can answer in the affirmative from our own introspection. And as Shand says "the arrest of an instinct is that which most frequently excites the emotion connected with it—there is no anger so intense as when the blood boils and all the sudden energy that comes to us cannot vent itself on our antagonists"[1].

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[1] *Op. cit.* p. 189.

This brings us back to Drever's conception that emotion only occurs when an instinct is checked and tension arises. More recently Carver has expressed a similar view and defined emotion "as the subjective experience which develops when gratification of the instinctive impulse is held in check by higher level control"[1]. He quotes in support the observation of Romanes that the lower the mental development of the organism, the more fixed and definite becomes the instinctive reaction and the less becomes the manifestation of emotion. The truth of Romanes' statement depends on the meaning given to 'manifestation of emotion.' If by manifestation of emotion is meant only visceral expression then it seems to be perfectly true, for experimental results show that the lower the mental development the greater is the muscular expression and the less the visceral expression, provided that we are justified in regarding the psycho-galvanic reflex as an indication of the visceral expression of emotion.

All therefore that we are entitled to say is that the muscular expression of emotion cannot be treated as a separate problem divorced from the question of control. It certainly seems as if the processes of inhibition and facilitation are the fundamental problems. So that when we return to our original question as to whether the so-called emotional or hysterical persons—really impulsive persons—subjectively experience any emotion, we can only answer, on the evidence of muscular expression and the behaviour of decerebrate animals, that it is quite as justifiable to assume that they do not as to assume that they do. And we are left only with the visceral expression which is not under voluntary control to answer our question.

We have then to ask—Are we justified in assuming that the amount of visceral reaction is an indication quantitatively of emotional excitement and subjective experience? This question is better left for discussion in connection with my experimental results. I would like to be able to maintain that we are so justified, but there are difficulties in applying this assumption. It seems certain at any rate that the emotion gains in intensity from the consciousness of visceral sensations and a way out of the difficulty might be to restrict the term emotion so as to make it include only the central psychical excitement together with the sensations from visceral expression, and to exclude muscular expression as being due to instinctive impulse.

This seems to be the most profitable view to take as an explanation of the facts, and I would therefore accept with some reservations the definitions of emotion as given by Drever and Carver. But in order to be a little more explicit I will anticipate my experimental results and will provisionally describe emotion as "a subjective feeling, consisting of central excitement and consciousness of peripheral sensations, occasioned by situations which powerfully oppose or facilitate the aim of any instinctive impulse."

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[1] A. Carver, "The Generation and Control of Emotion," *Brit. Journ. of Psychol.* 1919, x. 52.

(2) *Experimental Results.*

For the purpose of studying the visceral expression of emotion I have been experimenting with the so-called psycho-galvanic reflex. Before deciding as to how far we are justified in assuming that we can measure the intensity of an emotional reaction by this method it is necessary to set out the results of my experiments.

There are two methods of obtaining the psycho-galvanic reflex, that originally reported by Féré in 1888 due to apparent change of resistance in the skin when a weak electric current is passing through the body, and that reported by Tarchanoff due to production of an electromotive force when no external current is being used. And of these two methods it has been demonstrated by other investigators that the use of the current by Féré's method is the more reliable for measuring emotional reactions[1].

I am indebted to both Professor Waller and Dr F. L. Golla for help and instruction in the technique of this method, and it is with Féré's phenomenon that all my experiments have been concerned.

The technique I employed originally was that described by Waller[2], in which the subject is placed in the fourth arm of a Wheatstone bridge and his resistance determined by balancing out in the third arm. I have used a Paul's 'Unipivot' galvanometer, which has an internal resistance of 830 ohms, and as electrodes either saline baths or zinc discs, covered with lint soaked in saline, which are bandaged on to the palm and dorsum of the hand. I soon found that no reliable work could be carried out without photographic records, and for this purpose I adopted a method suggested by Professor A. V. Hill for the photographic recording of the heat production of muscles[3].

As a source of light for the galvanometer I use a 4-volt lamp, and as the light is reflected from the mirror of the galvanometer it is passed through a wide reading lens and brought to a focus, about the size of a pin's head, on to a kymograph, to which sensitive bromide paper is attached. The kymograph is adjustable as to speed and worked by clockwork, and has a small signal lamp attached to its framework. The lamp allows for a streak of light being projected on to the bromide paper for use as a stimulus signal, and this signal lamp is worked synchronously with the contact for the stimuli which can be given electrically, *e.g.* the ringing of a bell, flashing a light, a motor horn, releasing a weight, and giving a faradic shock. Time marking is indicated by a shutter working on an electro-magnet connected with a Brodie's clock, by means of which the light can be cut off at regular intervals, so that the time is indicated on the galvanometric curve itself.

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[1] F. L. Wells and A. Forbes, "On certain electrical processes in the human body and their relation to emotional reactions," *Archives of Psychology*, 1911, no. 16, p. 25.

[2] *Proc. of the Royal Society*, 1919, B. vol. 91, p. 17.

[3] A. V. Hill and W. Hartree, "Photographic recording of the heat production of muscles," *Journ. of Physiology*, 1920, LIII. no. 5, p. lxx.

This method allows of a continuous photographic record being taken over a period of half an hour, and by the use of an additional apparatus for rolling the paper off cylinders on to the kymograph, the record may be continued for 2–3 hours, or more. I am now using this method of getting simultaneous records of reactions from different parts of the body by reduplicating my Wheatstone bridge and galvanometer circuits.

Reproductions of photographs taken in this way are shown in the figures attached. A rise in the curve indicates a decrease in the apparent resistance of the skin—the method of time marking is indicated in the interrupted curves, the interruptions having been made every second, and the stimulus signal is indicated by the mark below the curve.

In a recent number of *Brain*[1] I have given a lengthy review of the work of previous investigators on this subject and of the problems involved. It has been definitely established that galvanometric deflections can be produced by certain psychical, physical and physiological causes, and it is agreed that the genuine galvanic reflex occurs only after a latent period of an average of two to three seconds following the stimulus, and that the most marked reactions are obtained either from the palms of the hands or the soles of the feet. There is still a controversy as to the physiological factors responsible for the reflex, and until these are ascertained we shall not be able to make much progress as to its clinical value. It is claimed by some observers that the reflex is due to the activity of the sweat glands, and those who maintain this view have reported experiments to show that the reflex can be abolished by the subcutaneous injection of atropine. It may be that these observers were dealing with secretory currents, for Waller has shown quite clearly that atropine does not abolish the much larger reaction obtained by Féré's

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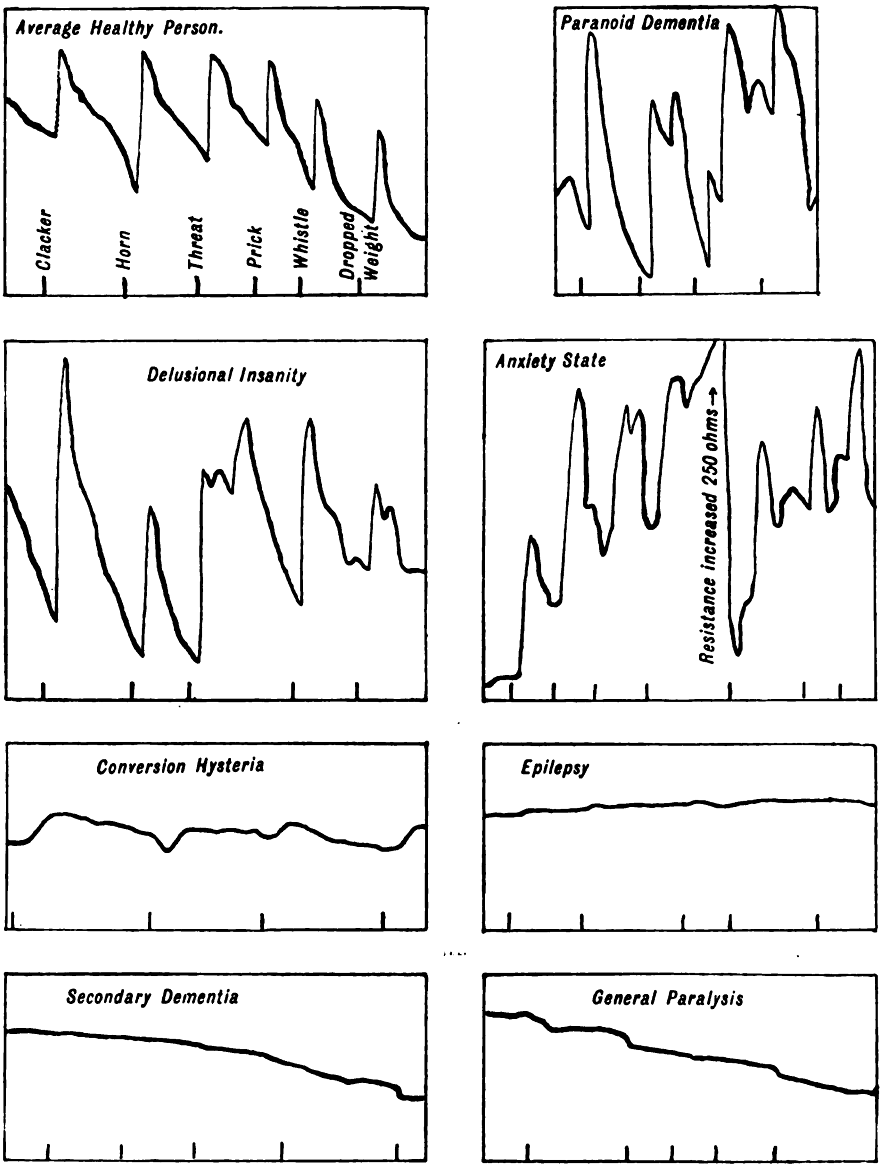
[1] E. Prideaux, "The Psychogalvanic Reflex: A Review," *Brain*, 1920, XLIII. p. 50.

Psycho-galvanic Reflex—Typical Reactions (from photographic records) in cases of Mental Disorder



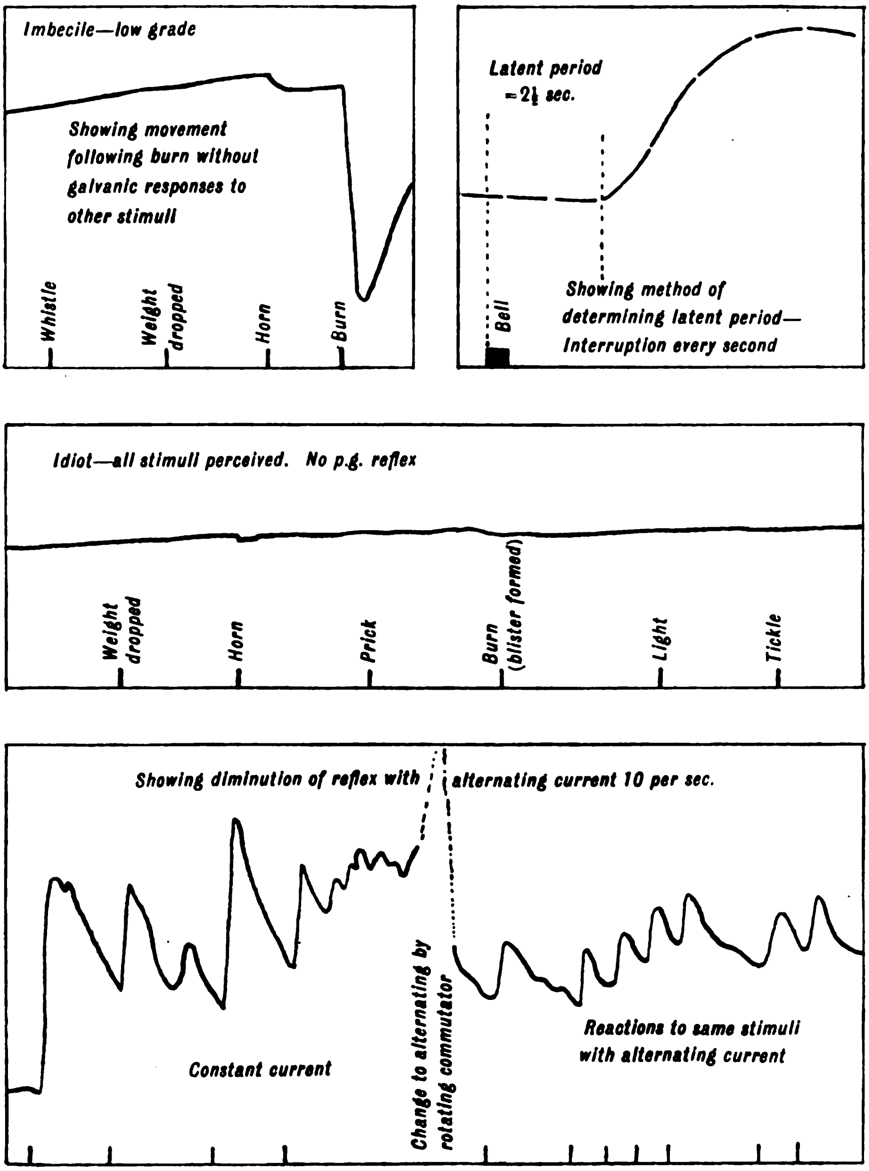
method. But, as Mr Barcroft has suggested to me, Waller's experiments do not disprove the fact that the activity of the sweat glands may be responsible for the reflex. Barcroft has shown that there is a subliminal degree of functional activity in the case of the submaxillary gland, and that there is increased metabolism on stimulation of the chorda tympani in the atropinised submaxillary gland without flow of saliva, as shown by the increase in oxygen percentage, and it is probable that in the same way the subliminal activity of the sweat glands may not be suppressed by atropine. If this can be shown to be the case it would be in accord with what we know of the physical nature of the reflex.

The difficulty in interpreting the results of different observers is that they have been obtained under varying electro-physiological conditions. In order to get records which will be directly comparable in different classes of patients it is essential to have as constant a set of physical conditions as possible.

Experiments which I have carried out on the physical nature of the reflex show definitely that the reflex is a polarisation effect. The result of passing a constant current through the skin is that a polarisatory resistance is set up, and it is this polarisatory resistance which is diminished as the consequence of an emotional reaction. Experiments which I am now doing with Mr P. Blackett at the Cavendish Laboratory point to the fact that the skin and electrodes as a whole act very like a secondary cell of very small size, and that when using high frequency currents from a valve circuit polarisation is not abolished until the alternations reach 5000 per sec. That the reflex is not due to a production of an electromotive force of muscular origin is shown by the fact that the reflex, though much smaller, still occurs with the alternating current and can be shown quite easily on a vibration galvanometer with alternations of 400 per sec., but it gradually diminishes and becomes inappreciable with higher frequencies, in spite of the fact that as the frequency increases the resistance diminishes and the current therefore becomes much greater. Diminution of polarisation also occurs as a result of diminishing the strength of the current passing through the skin, and the reflex diminishes *pari passu* with this diminution. To get comparable results therefore it is necessary to arrange for all the factors causing polarisation to be as constant as possible—the strength of current in each case, the electrodes, the strength of the saline and the area of the skin acted upon must all be the same.

Therefore in the constant method I have discarded my arrangement of electrodes in saline baths, as the area of skin acted upon by the

Psycho-galvanic Reflex Reactions from photographic records

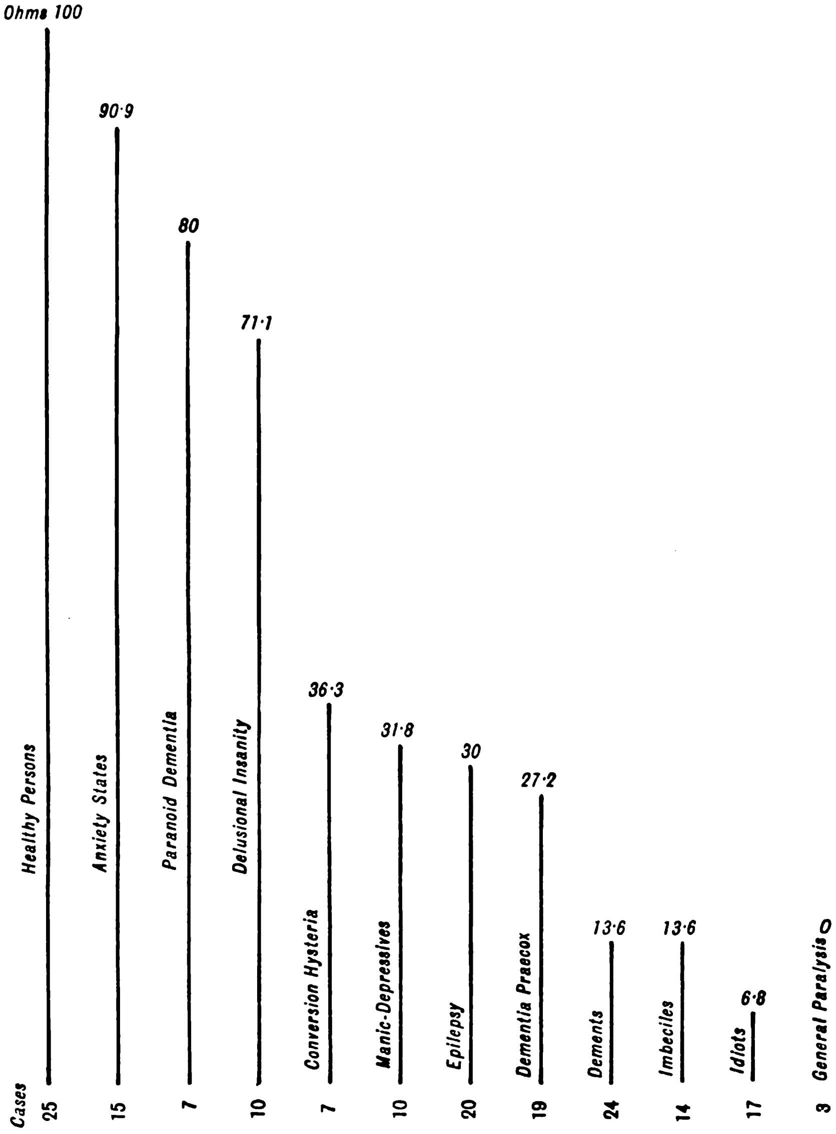


current varied according to the size of the hands or feet, although this arrangement gives a better contact. I now use the same zinc electrodes covered with lint soaked in a stock solution of gramme molecular saline.

The electrodes are kept in position by firm bandaging over rubber sheeting, which acts as an insulator and also prevents evaporation. There appear to be considerable differences, which can be shown by taking simultaneous records, in the reactions of the two hands in some individuals, and so I always use the same hand—the left—and I always fix the electrode acting as anode to the palm. To prevent movement the limb is fixed to a splint, but in those cases where I wish to use the galvanometric deflection as an indication of movement—as an indicator of muscular expression—I use the saline bath electrodes. In that case the deflection is in an opposite direction, if in the first instance the hands are squarely placed flat on the bottom of the dish, and is due to an increase in actual resistance caused by a withdrawal of the hands from the solution, and it can be further distinguished from a genuine psycho-galvanic reflex by the fact that it takes place almost immediately after the stimulus. In the use of the electrodes by the palm-dorsum method great care has to be taken to ensure good contact. I have my electrodes slightly moulded to fit accurately, but the method is not altogether satisfactory, and, although I have tried different forms of semi-liquid electrodes, I have not been successful as yet in devising any better arrangement, which is at the same time convenient for practical use. It is also necessary to have a constant E.M.F. as the source of the current and for this purpose I use a 2-volt accumulator. To ensure a constant strength of current, the same milliamperage in every case—I find 0·3 milliamperes to be a convenient strength for recording purposes—I now put in an additional rheostat and milliampere meter in series with the patient, keep the third arm of my bridge constant, and vary the resistance in my additional rheostat to balance with the constant in the third arm. This method would appear to give as constant a set of conditions as is practicable. With the arrangement as used by Waller the milliamperage varies with the resistance of the patient, so that the less the resistance the more marked appears to be the psycho-galvanic reflex. And as the resistance as measured by Waller does not correspond to any reality but is composed of actual resistance plus polarisatory resistance, this total apparent resistance varies with the strength of the current and his results are only comparable after a more complex calculation.

The first difficulty in comparing the reactions of different individuals is that it is impossible to decide on a normal, and the second is that variation in the same individual at different times is very considerable. As a result of previous work I had noted that healthy persons could be divided into three classes according to their galvanic reactions: (1) those who reacted by muscular movement and gave very little genuine galvanic reflex, (2) those who gave a marked psycho-galvanic reflex and very little indication of muscular movement, (3) the phlegmatic group who gave very little or no response at all of either kind. It would seem that the impulsive persons come into the first group and the 'tender-minded' of James into the second. But it appeared that the same individual might almost come into each one of these groups at different times according to his condition. The difficulties in determining the factors responsible for this variation in the same individual are very considerable. The galvanic reflex is certainly diminished as the result of fatigue, and this was very noticeable during the recent heat wave; in a series of experiments in two subjects it has been diminished during menstruation, and Mr Whately Smith's experiments show that it may be diminished after alcohol—it seems to be increased during a condition of general vasodilatation, though the local cutting off of the blood supply to the parts connected with the electrodes has no effect, and it is increased by a state of hyperthyroidism. One of the difficulties in experimenting with the same individual is that after a time he begins to get indifferent and fails to react, so that I have done a series of experiments, in which only one experiment has been performed in each case. And as it seemed that more information would be forthcoming in cases definitely abnormal, I have done this series in persons suffering from mental disorder and psychoneuroses. I am indebted to Dr M. A. Collins of Chartham Mental Hospital and Dr Archdale of the Cambridge Mental Hospital for allowing me the facilities and giving me the necessary information to enable me to conduct these experiments. I have experimented by the Constant method, using a current of about 0·3 milliampere, on 146 patients (140 male and 6 female—male patients are perhaps more constant, as the possibility of the influence of menstruation has not to be taken into account) and on 25 healthy male persons under the same conditions to act as controls—total 171 subjects, and photographic records have been taken of the reactions in each case. Each case has been subjected to 5 or 6 stimuli—(1) whistle, (2) dropping weight, (3) motor horn, (4) flashing of light, (5) threat to prick, (6) Dalby's clacker, and the average of the responses in each individual in terms of the absolute decrease in ohmic resistance is taken to indicate the sensitivity for the galvanic reflex in that particular individual.

Psycho-galvanic Reflex in Mental Disorders. (171 *subjects*)
Showing absolute change in decrease of ohmic resistance with current of 0·3 *milliampère*



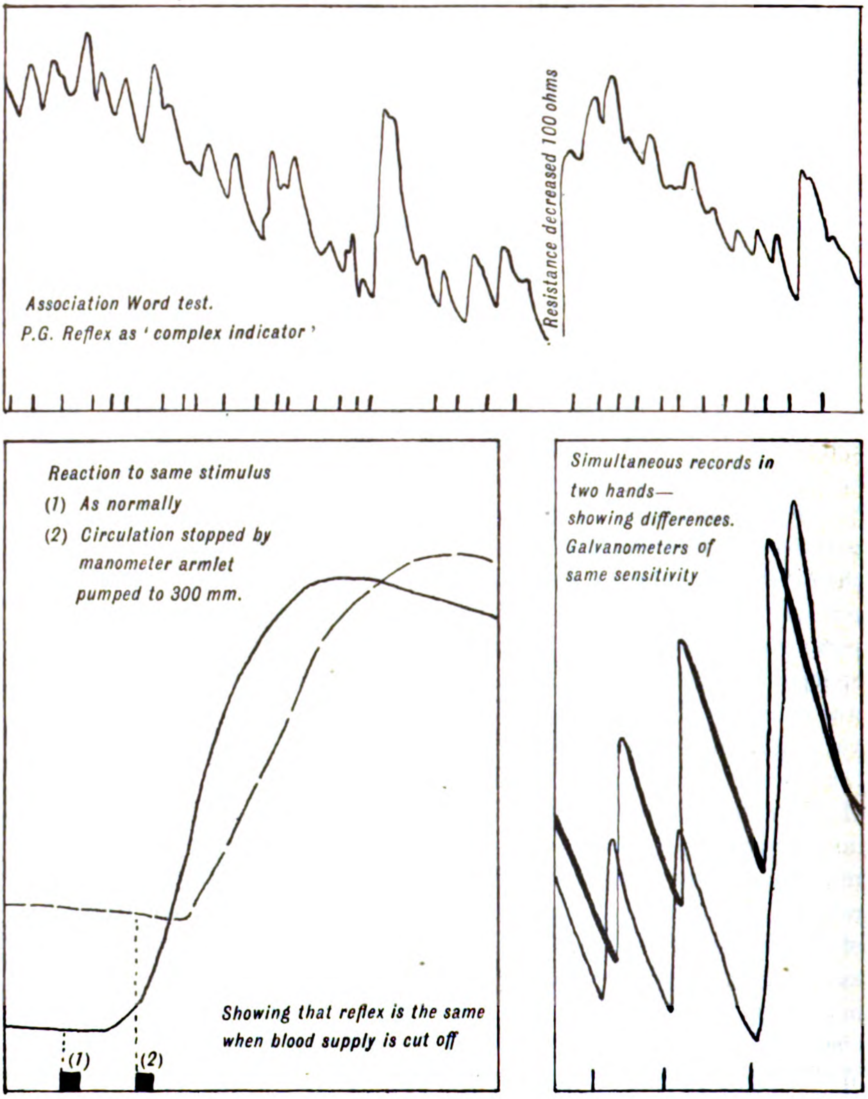
The cases are put into classes according to the nature of the mental disorder, as far as it is possible to pigeonhole them, and the average for each class calculated.

The results work out as follows:

No. of cases	Class	Average decrease in resistance in ohms.
25	Healthy persons	100
15	Anxiety states	90·9
7	Paranoid dementia	80
10	Delusional insanity	71·1
7	Conversion hysteria	36·3
10	Manic-depressive insanity	31·8
20	Epilepsy	30
19	Dementia praecox	27·2
24	Secondary dementia	13·6
14	Imbeciles	13·6
17	Idiots	6·8
3	General paralysis	0

In the case of the 17 idiots, 12 gave no galvanic reaction at all in spite of the fact that in all except two the stimuli were certainly perceived, as evidenced by marked muscular responses of a reflex character. So also 4 imbeciles, 16 cases of secondary dementia, 6 of dementia praecox and 10 of epilepsy gave no reflex. It is to be noted that though the differences between some of the classes are slight, the classes can be put into three groups: (1) healthy persons, cases of anxiety states and paranoia, (2) cases of conversion hysteria, manic-depressive insanity, epilepsy and dementia praecox, (3) dements, imbeciles and idiots. There was considerable variation in the initial resistances in individual cases, varying from 6800 ohms to 700 ohms, but apart from the epilepsy group there were no characteristic differences between the classes. In the case of the epilepsy group the resistances were much lower—the average initial resistance in the 20 epileptics was 1500 ohms, whereas the average resistance in the remaining 151 subjects was 2550 ohms. There was no relation between the strength of the galvanic reflex and the resistance of the skin in different individuals as determined at the beginning of the experiment, as Waller seemed to think was the case. Such a relation may occur and probably does in the same individual because the apparent changes in resistance, for example the diurnal variation reported by Waller, seem to be changes only in polarisatory resistance and it is only within the range of polarisatory resistance that a reflex is possible—there is no variation in actual resistance when determined by the high frequency method.

Psycho-galvanic Reflex Reactions from photographic records



As these experiments suggested that the psycho-galvanic reflex was conditioned by the state of the cerebral cortex, I did two experiments in association with Dr Adrian on cats—one on a spinal cat and one on a decerebrate cat—and although the experiments were not very satisfactory on account of the difficulties of movement there was certainly no evidence of any galvanic reflex at all. That the reflex occurred in normal cats was shown by Veraguth, who also demonstrated that it was abolished during ether narcosis. The reflex has also been reported by some observers as occurring in normal frogs, but I could not obtain any reflex from decerebrate frogs. I also investigated in all these patients the question of dermographia, but no correlations could be obtained between it and the psycho-galvanic reflex—its intensity and time of appearance varied quite irregularly and it might be just as well marked in an idiot as in a healthy person.

(3) *Interpretation of Experimental Results.*

The first question to be considered is as to how far the psycho-galvanic reflex is an indication of an emotional reaction. The only way of deciding this point is to compare the strength of the galvanic reflex with the intensity of the emotional experience as introspectively observed. The difficulty here is to get subjects who are trained introspectionists—when experimenting with the reflex as a 'complex' indicator in word association tests I found it almost impossible to rely on the introspections of the subject. The experiments of Wells and Forbes[1] and those of Whately Smith[2] and others point to the conclusion that the strength of the reflex and the intensity of the emotion are closely related—Wells and Forbes state: "Taking into account the inaccuracies of introspection, as well as the sources of error remaining in the experimental method, these results seem to show that in central tendencies a fairly close relationship exists between the intensity of the objective reaction and the electrical disturbances in the tissues involved." It is however certain that in some sensitive subjects, and some of these have been trained introspectionists, a galvanic reaction occurs without any emotional experience as introspectively observed, but it is also true that in these subjects the strength of the reflex has corresponded pretty closely with the intensity of the experience. So that we can probably allow that for crude emotions at any rate the psycho-galvanic reflex is in the same individual at the same sitting an indication of his subjective experience. But this does not allow us to draw the conclusion that because *A* gets a greater reflex than *B*, therefore *A* experiences a greater intensity of emotion. It is here that introspection fails us as a method of comparing one person with another. For it is just those persons of the impulsive and hysterical type who should be able to give the most valuable information but who fail so completely when it comes to introspection. But I have been able to obtain some information on this point by experiments on the same individual at different times and under different conditions and it certainly seems as though at some times a person is able to experience considerable feeling, at any rate momentarily, without giving a very large galvanic reaction and at others that he will give a large galvanic reaction with only a very small amount of emotional experience or possibly with none at all. Moreover the differences to be observed in the reactions of the two hands as recorded simultaneously to the same emotional stimulus in some persons—and in a recent experiment the reaction in the left hand was three times as great as the reaction in the right—suggest that the condition of the skin is the important factor, unless we can assume differences in the optic thalami, as in the case of those patients reported by Head and Holmes with a lesion of one optic thalamus, who seemed to express their emotions on one side of the body only. Experiments on patients with lesions of the optic thalamus would throw much light on the subject from this point of view. The fact that the galvanic reaction is only obtained to any appreciable amount from the palms of the hands and soles of the feet shows the importance of the skin factor, but one would not have expected that there should be such marked difference between the palms of the two hands in persons who do no manual labour. Granted that the reactivity of the skin is the important factor, it becomes necessary to know what are the factors influencing this reactivity. On the one hand the skin does not react and there is no reflex because no emotion is aroused, and on the other the skin fails to react in spite of the emotion apparently aroused. The psycho-galvanic reflex by itself only gives us information as to the reactivity of the skin and cannot as yet, unless we accept the James-Lange theory, which we have already rejected on the grounds of the latent periods of visceral reactions, be regarded as giving information as to emotivity. But the skin reaction is only one of the objective reactions to emotional stimuli, and galvanic reflex experiments must therefore be correlated with other methods of determining quantitatively the visceral changes. I have had the opportunity of comparing my psycho-galvanic reflex results with some of the results obtained by Dr Mira of Barcelona on blood pressure changes following emotional stimuli, as shown by Pachon's method, and Dr Mira tells me that although he has not done so many observations his results on cases of mental disorder are of the same order as my psycho-galvanic experiments. It therefore seems probable that the reactivity of the skin is closely related to the reactivity of the autonomic nervous system as a whole, although the condition of the skin itself may account for local differences.

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[1] *Op. cit.* p. 26.

[2] W. Whately Smith, "Experiments on Memory and Affective Tone," *Brit. Journ. of Psychol.* 1921, XI. p. 236.

If it was only a question of autonomic reactivity then it might be possible to explain some of my results, the small reaction in cases of conversion hysteria as compared with the large reaction in cases of anxiety hysteria for example and the difference between the reactions of tough-minded and tender-minded persons, on the assumption that those who gave a large response had an exaggerated sensitivity of the sympathetic nervous system, and the strength of the reflex in cases of hyperthyroidism would support such a view. And it might be that a small reflex corresponded with the 'vagotonic' disposition of Eppinger and Hess and a large reflex with a 'sympathicotonic' disposition.

But as Langley has shown the sympathetic system cannot give true reflexes without the intervention of the central nervous system and until we know more about the interaction between the autonomic and central nervous systems we cannot interpret our results satisfactorily. My experiments certainly suggest that the psycho-galvanic reflex is conditioned by the state of the cerebral cortex. In those classes of patients where we have definite evidence of cortical degeneration or maldevelopment there is only a very small or no reflex at all, in those cases where organic changes in the cortex are probable and also in conversion hysteria there is only a comparatively small reflex, and in others in whom there is no evidence of cortical change there is a much larger reflex. But healthy persons may give under different conditions a reaction which varies from one very much in excess of the average to one which is not much larger than that of an idiot. I noted in my review[1] that the reactions in subjects of poor intellect, as evidenced by their low standard at school, were rarely so marked as in my intellectual subjects, and Miss M. D. Waller as a result of her investigations on seventy-three medical students, concluded that intellectual efficiency, as judged by examination results, was associated with higher nervous sensitiveness in the psycho-galvanic reflex. Although this is true all one can say is that a high reflex does not occur in those who are intellectually inefficient but a low reflex does not necessarily indicate intellectual inefficiency. In a paper on the relation of the psychoneuroses to mental deficiency[1] I showed the liability for those who had been in the lower standards at school to suffer especially from conversion hysteria and for those who had reached the higher standards to suffer from anxiety states. Amongst my military in-patients of those who had not reached higher than standard III, 82 per cent. suffered from conversion hysteria, whilst of those who had reached standard VII only 6 per cent. suffered from conversion hysteria and many of these were of the fixation hysteria type. The difference therefore in the galvanic response between the cases of conversion hysteria and anxiety states, which in other experiments, not carried out by the constant method and therefore not strictly comparable with this series, has been even more marked, may be due to some inherent lack of development of the cerebral cortex. That the failure of the galvanic reflex is not necessarily due to want of psychic elaboration of the stimulus is shown by the fact that in those cases, in whom the psycho-galvanic reflex is small or non-existent, the deflections due to physiological causes—coughing, yawning, etc.,—are equally small or non-existent. One explanation of the absence of the reflex in cases of cortical degeneration would be to assume that the psycho-galvanic reflex was an associative reflex in Bechterew's sense, and that the visceral organs have a cortical representation as Bechterew has tried to show, but no further evidence has been forthcoming to support this view and most authorities seem to be against it.

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[1] *Brain*, 1920, LXIII. p. 69.

Whatever the correct interpretation of the results may be we must regard the cerebral cortex as being an important factor in the determination of the psycho-galvanic reflex. And since Head and Holmes have shown the chief functions of the cortex to be of an inhibitory and discriminative nature, we are entitled to conclude that apart altogether from the question of autonomic reactivity the psycho-galvanic reflex will not occur unless the inhibitory functions of the cortex are stimulated. These results support the view which I tentatively put forward in a paper on "Suggestion and Suggestibility"[2] that "the psychogalvanic reflex may be an indication of the contrary or epicritic forces stimulated by the liberated emotion, and that it is not merely an emotive response." That the state of the skin is merely conditioned by the state of the cortex might be a possibility, and perhaps the psycho-galvanic reflex experiments alone do not entitle us to assume anything more than that, but this would not account for the results of Dr Mira's experiments. And moreover the relation between the muscular expression and the visceral expression—the fact that, when some central excitement is aroused and much muscular movement reflexly results, there is very little galvanic response whilst on the other hand the suppression by reflex inhibition of the muscular reflex is accompanied by a large galvanic response—points to the conclusion that it is the inhibitory functions of the cortex, which condition the reflex. We can probably allow that the psycho-galvanic reflex is a criterion of the visceral changes consequent on emotion, though there may be specific visceral reactions in some people to specific emotions, as we know that each person has his particular predisposition.

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[1] E. Prideaux, *J. of Neurology and Psychopathology*, 1921, vol. II. no. 7.

[2] E. Prideaux, *Brit. Journ. of Psychol.* 1920, x. p. 228.

So that we can infer that a psycho-galvanic reflex and therefore visceral changes occur when an instinctive impulse is aroused—that is physiologically when the optic thalamus is stimulated—and when at the same time the impulse is reflexly inhibited from within or stimulates the discriminating functions of the cortex, but we cannot say that the converse is true, that the absence of a galvanic reflex necessarily means a lack of inhibition, as it may also indicate a diminution of reactivity of the skin or autonomic nervous system.

We can say therefore in the case of the idiot that no visceral changes occur because of the lack of inhibitory functions of the cortex, or at any rate of some factor associated with it, but we cannot say this definitely of the classical hysteric. When however the fact, that the average hysteric is shown to be of a lower mental development, is taken into account his lack of visceral response would appear to be due to the same cause.

And since we have found that visceral changes may occur without arousing an emotion, and that some central excitement can be aroused without producing visceral changes, we cannot infer that a person who gives no galvanic reflex experiences no kind of emotion. It would seem impossible to distinguish the central excitement properly belonging to an emotion from that which is merely instinct-feeling accompanying an impulse, but it seems certain that the emotion gains at any rate in intensity and duration from the consciousness of visceral sensations and that unless the central excitement is so reinforced it expends itself in the satisfaction of the impulse by muscular expression and leaves no feeling remaining which can be called an emotion. This central excitement part of the emotion is only momentary and disappears almost as soon as it is aroused unless it is reinforced by the visceral sensations. From this point of view it would appear that James and Janet were right in holding that the emotions of the hysteric were for the most part artificial. And it would seem that these results justify my description of emotion given in an earlier part of this paper, that emotion is "a subjective feeling consisting of central excitement and visceral sensations, occasioned by situations which powerfully oppose or facilitate the aim of any instinctive impulse."

Summary.

(1) The term 'emotion' is used in this paper as a subjective feeling consisting of central excitement and consciousness of visceral sensations.

(2) The James-Lange theory is untenable except in a very modified form.

(3) The psycho-galvanic reflex is in the same person at the same time and under the same conditions an indication of the intensity of crude emotions as subjectively experienced.

(4) There is considerable variation in the amount of the reflex in the same person at different times due to such causes as fatigue, alcohol, menstruation, etc.

(5) The psycho-galvanic reflex is not necessarily a criterion for comparing emotional reactions in different persons, unless we accept the James-Lange theory—taken by itself it only indicates the reactivity of the skin. But it seems to be a criterion of the amount of visceral sensations which are the concomitants of emotion and which reinforce what would otherwise be only a momentary excitement.

(6) The psycho-galvanic reflex is conditioned by the state of the cerebral cortex, but the relative parts played by the condition of the skin, the optic thalamus, and the reactivity of the autonomic nervous system have to be determined.

(7) In patients with definite cortical degeneration or maldevelopment the reflex is very small or non-existent, in cases where organic changes in the cortex are probable it is comparatively small, and in others in whom there is no evidence of cortical change it is much larger.

(8) The view of James and Janet that the emotions of the hysteric are largely artificial is probably correct.

EMOTION AND EYE SYMPTOMS.

By W. S. INMAN.

During the past fifty or sixty years it has been customary to regard errors of refraction as the cause of many symptoms of ill-health. Headache, tics, insomnia, inability to concentrate attention, photophobia, flushing and watering of the eyes, neuralgia, anorexia, constipation, anaemia, mental dullness, sleepiness and languor, squint, migraine, hysteria in many of its forms, are but a few of the troubles attributed directly or indirectly in modern English text-books to eye-strain. Some American ophthalmologists have been even more extravagant in their views, and claim to have cured scores of other ills by means of glasses. The mental and emotional state of the patient has not been considered, and the possibility of this state determining the eye symptoms instead of the eye condition causing the general manifestations appears to have eluded both oculist and physician. It is the object of this paper to show that the eye rarely produces other than ocular symptoms, unless the patient is emotionally unstable, and that he frequently is relieved, not by glasses, but by suggestion or else by some adjustment of the inner life usually unknown to the oculist.

Headache is the most common symptom for which patients seek relief from the ophthalmic surgeon. There are scores of thousands of people in this country alone who are wearing glasses, not for the purpose of seeing better, but solely to relieve headaches. In America, I believe, the practice is much more common. In France, on the contrary, it is rare. Are we to assume that the French suffer less from a given degree of eye-strain, and the Americans more? It must be remembered that the correction of errors of refraction is a modern invention. Astigmatism was hardly known, even by the medical profession, fifty years ago, and a hundred years ago probably no one wore glasses, except for old sight and pronounced degrees of hypermetropia and myopia. It is true that reading in those days, at any rate as we understand reading now, was rarely indulged in, but many occupations needed close attention to detail. Modern machinery, such as the sewing machine, has relieved the eyes of a great deal of strain. Either a large proportion of our forefathers suffered from chronic headache, or they were of a different breed from their descendants three generations later. The literature of those days certainly describes the neurotic, usually a woman, with her vapours and humours. She probably suffered from headache, though I am not aware that it is specifically mentioned. Is the modern man or woman affected with headache, for which no obvious physical cause can be found save eye-strain, considered by the medical profession to be suffering from a neurosis? Are other symptoms present which are overlooked? An error of refraction of some sort can be found in the majority (probably 90 per cent. would not be an over-estimate) of the population. Why do some suffer, and not others? It is clear that other factors must be sought, and some years ago I began to study the type of individual who complained of the nervous symptoms of which the chief is headache. One of the earliest cases which comes to my mind is the following:

About twelve years ago a highly intelligent woman of thirty-eight consulted me for pain in the eyes of some months' duration, accompanied by difficulty in reading. A careful estimation of the refraction revealed only 1 D of hypermetropia. Such an error may be considered always as congenital. Thousands of people have this amount without being conscious of it in any way whatever. It seemed to me that there must be some unrecognised reason for her present susceptibility and past immunity, for the eyes had not troubled her before. The glasses were taken from her face, and she was invited to talk about herself. After a moment's hesitation she began the following pitiful story:

At the age of eighteen she had been seduced under promise of marriage. The marriage eventually took place. During the honeymoon the husband coolly explained to his wife, who was really fond of him, that originally he had had no intention of marrying her when he gave the promise, but that a later consideration of his honour had decided him to carry out his pledge. This was a great blow to her womanly pride, for she had thought the marriage one of affection. Two children were born, and had attained the ages of ten and twelve when the husband became partially impotent. She kept true to him until she found that he was carrying on an intrigue with another woman. Then she considered it no disloyalty to take a lover. Eventually the husband was forced to take notice of her conduct; to avoid a scandal for the children's sake he exacted a promise from her that she would not see her lover again. This she had faithfully kept until that date. Loneliness and dissatisfaction with life oppressed her, and she found it difficult to distract herself by reading and needlework. I ordered glasses for her, and gave her what I thought to be good advice and encouragement. She was much better generally for several months, though unduly emotional. Then I lost sight of her for a time. When next we met, she was looking radiantly happy and well. She had resumed her intimacy with her lover, and had realised that eye-strain was a very unimportant factor in her physical distress.

Many such cases of emotional stress presented themselves. A common instance was the young mother. Either during pregnancy, or soon after confinement, she sought relief from definite or vague symptoms, which were attributed to eye-strain. An error of refraction was usually found, glasses were prescribed, and she was assured that she would be relieved by them. They were worn for a few months, and then frequently discarded: yet the refractive error remained. This needed explanation. Consider the mental state of the patient. She had been taken from the family of which she had been an important but careless factor, and plunged into a new life, of which she knew very little, and for which she had never been educated and prepared. She was expected to adapt herself to it by the light of Nature. Separated from the protection of her family, she had to conform to the standards of life of a comparatively strange man, to share his bed and board, often at a considerable distance from her own home, with few friends, and those recently acquired, with new social duties and domestic responsibilities, and with much spare time to dwell upon her new life, in the absence of her husband at his daily work. Little wonder at her facing her first confinement with alarm and apprehension. The Woman's movement and its revelations in widely spread literature told her of the mortality in childbirth. The confidences of her friends awakened her mind to the agonies of prolonged childbirth. As one expectant mother told me, "I know only too well the pain of having the bowels opened when constipated; how shall I bear the bringing forth of a fully formed child?" To such people, the first confinement is a veritable shock. It is ridiculous to think of every woman regarding childbirth as a normal everyday matter: as well expect her to look upon death with equanimity.

Then came the joys of motherhood. Attending upon these were the duties—sleepless nights, anxiety about the infant, whose every cry might end in a convulsion, the absence of the nurse upon whom she had depended for advice, the departure of the mother, who had come for her daughter's first confinement, and who represented care and spiritual comfort and gave a sense of importance to her function in life. And then the resumption of the rather lonely life—can it be marvelled at that she became once more self-centred? Under these circumstances, it is easier to develop neurosis than character. The making of the infant's clothes not only led to more use of the eyes, but gave greater opportunity for day-dreaming. Naturally the symptoms which arose were attributed to the prolonged use of the eyes, and she sought relief in glasses. After some months, adaptation to the new life was obtained. She resumed her outside interests, games were again indulged in, she could go abroad with her husband, the child ceased to trouble her sleep, and throve as is the way of even first children, and the glasses were put on one side and forgotten. They, however, got the credit for the abatement of the symptoms. It must not be thought that I claim that headache is never due to eye-strain. Brow-ache, due to the over-action of the frontalis and orbicularis, is common where a prolonged effort has to be made to overcome a considerable error of refraction, such as a high degree of hypermetropia or astigmatism, the facial muscles being called into play to aid the purely ocular muscles. Pain is often absent even in such cases, as shown by a boy of twelve, with 9 diopters of hypermetropia, who has never suffered in his life, although he has reached the ordinary standard at school for his age. But an ache in other parts of the head, such as the top or back, or radiating pain along the temples, is to be regarded with grave suspicion by the ophthalmic surgeon, as belonging to a more general functional nervous disorder.

I think it will be generally conceded that the frequency and intensity of headache has no relation to the degree of strain.

Ophthalmology offers no explanation of the cure of severe headache in a boy of ten years of age who had a high degree (3 diopters) of hypermetropic astigmatism. He had worn the glasses with complete relief for three years. Then, before getting a new pair of spectacles, he was re-examined, and it was found that the optician had carried out the original prescription so carelessly that the axes of the cylinders were about 60° wrong, and the boy could see better without than with the glasses.

I have found again and again that headache, eye-ache, inability to focus or concentrate upon reading or sewing or fine work, have begun at some period of emotional stress. Strangely enough, the patient is never aware of this fact, and is always astonished when it is revealed. It occurs equally in children and adults. In the former it is very common about the age of ten. A consultation lasting but a few minutes does not give sufficient time for probing the matter very deeply, and a good deal of intuition is necessary to arrive at a solution of the difficulty. Fortunately the attendance of one of the parents gives much information. Especially helpful is a study of the father. The average father fails lamentably in his duties towards his children. His idea is usually that embodied in the fifth commandment. He is to be honoured regardless of his deserts. The next generation is brought up as he was brought up. What was right for him must be right for his child. I regret to say that after examining many thousands of children, I have come to the conclusion that the mark of the father on the offspring is very frequently the mark of the beast. This opinion I hope to justify by various examples, especially in my remarks on squint.

The adult's difficulties which determine the development of nervous symptoms commonly show about the age of puberty, a period which is grievously mismanaged. Girls suffer more than boys. Their emotional growth is more rapid. Until recently nothing was done to help them, to give them a sympathetic explanation of the phenomena of sex. I have had many confidences from women, of their difficulties during this period. Masturbation, solitary or mutual, day-dreaming, morbid curiosity, actual sexual experiences with boys or men—very often close relatives, such as cousins or uncles or even brothers—these are stresses which leave a permanent mark upon the inner life and its outward expression. One girl of twenty-three confessed to me that she had had sexual relations with her three uncles, all brothers of her father, the first at the age of thirteen. She was in a very hysterical state, because her fiancé had his suspicions that something of the sort had happened, and he was attempting to make her his mistress instead of his wife. Another girl of eighteen attended the hospital complaining of disabilities for which there was no adequate ocular cause. On being asked if she were not in some sore trouble, she broke into an agony of weeping, and said that her father had outraged her twice; on the second occasion he was interrupted by the stepmother, who then attempted to stab her with a knife. What is the use of correcting one diopter of hypermetropia with a pair of glasses in such a case? Her symptoms had disappeared when she attended a week later, and did not recur for a year. But every case has not had such harrowing experiences. The matter may be much more subtle, as in the case of a devout Roman Catholic girl of twenty-three, whose refractive error was not sufficient to account for her pain, and who had suffered only since falling in love with a priest. She had confessed to her own parish priest, had been told it was a sin, admonished and made thoroughly miserable. I ventured to commend her capacity for a pure affection for a good man, and her symptoms disappeared.

A lady brought her daughter, aged thirteen, for advice. Three years previously glasses had been prescribed by an ophthalmic surgeon for headache, and had been worn constantly ever since. At the periodical examination of the pupils at the school, the medical officer had told the patient that she might stop wearing the glasses, but her mother preferred to consult an oculist. I found that the lenses were only + 0·5 Sph. The girl said that they gave her great relief. It was clear that some other factor than eye-strain was present. She was an only child. The intimate friendship between mother and daughter was obvious. The mother at first could suggest no emotional cause for the symptoms, but soon remembered that just before the child was taken to the oculist there had been a discussion about sending her away to school. The girl had raised little objection apparently, but from considerations of health a day school was chosen.

I advised that the glasses should be discarded completely. This was done, and at the end of six months she reported that she had had no discomfort. A month ago, the mother consulted me for eye-strain. Her glasses were found to be correct. The symptoms had arisen last August, immediately after the death of her own mother. Notwithstanding the experience with her daughter, she had not recognised the association.

About two years ago my friend Dr Millais Culpin, for whose help and advice I make grateful acknowledgement, asked me to find out how many of my patients suffered from fear of the dark. He was anxious to know what proportion of the general population was affected, but the investigation was soon abandoned because it became clear that the patients of an ophthalmic surgeon could not be accepted as normal. They were of the neurotic type, and therefore more inclined to suffer from phobias. I cannot give definite numbers, but the fact was established to my own satisfaction that nearly every person who complained of the effect of glare or bright light, whether natural or artificial, had either definite fear of the dark, or could remember his struggles to get rid of the fear when a child. In this connection, may I explain that such a history is not easy to obtain, especially from men. It is man's clear duty to be afraid of nothing, and he will deceive everyone, including himself, to fulfil this duty. A year ago, a man of about forty consulted me, owing to intolerance of light, which he attributed to the glare of India. He had lived there for many years, and was a big game shooter in his spare time. I forget how long he had suffered from discomfort in the eyes, but he had wandered from oculist to oculist seeking relief. The correction of his error of refraction in various ways, and the use of dark glasses, amber-coloured glasses, and chlorophyll tinted glasses had failed to help him. Even that ultra-modern invention of Sir William Crookes, advertised as Crookes glass, and lately much affected by ophthalmic surgeons and opticians, proved ineffectual. At the end of the recital of his troubles, I drew a bow at a venture, and asked, "What about your fear of the dark?" The effect was electrical. He admitted that he was terrified in the dark, and said that even when shooting in the jungle, he would arrange his plans very carefully so that he might reach his tent by sunset. He would then retire for the night with a lighted lamp, and not venture forth until daybreak, but he took elaborate precautions to hide the cause of his conduct from his servants. All his life he had kept his phobia a close secret, even from his wife. It dated from early childhood, and he could not explain it. If he had had a genuine fear of the light, it is very unlikely that he would have chosen India for his life's work.

It may be added that he had also an intense fear of dogs, and could not bear one to come near him.

If such a man would take so much trouble to conceal what he considered to be unmanly, it is clear that much understanding and sympathy are necessary in order to arrive at the truth. So many similar histories, though of course less striking than the foregoing, have been obtained, that I am convinced that fear of the light as a manifestation of a concealed fear of the dark is a genuine instance of the ambi-valency of emotion.

In this connection another case comes to my mind. Two years ago I was called to see a child of three, who had been unable to face the light for some weeks. The mother feared some serious inflammation, and yet must have had some doubts, or she would have sought advice earlier, for they were wealthy folk, and the child was heir to a large estate. The child entered the room with every appearance of photophobia. Some time was necessary to win his confidence, but at length he allowed me to make an examination, and to my astonishment nothing abnormal could be found. He bore the strong light of a focused lamp without difficulty or discomfort. During the examination he repeatedly pushed his hand into his mother's bosom, which awakened my suspicions. He slept with his nurse. I asked to see her. She looked a healthy country girl, but enquiry revealed that she had had charge of the boy for only a week. The previous nurse, a woman of forty-five, had left a week before, and the mother under pressure gave an unsatisfactory account of her. She had behaved strangely. She was infatuated with the child, declaring that he was as sweet and holy as the Infant Jesus, and that people ought to approach him on their knees. On several occasions the mother had heard the child panting, and thinking he wished to relieve his bowels had taken him to the lavatory, but he had shown no desire to avail himself of the opportunity. There was reason to believe that the mother was concealing other significant facts. The child's photophobia persisted for many months, and then gradually disappeared without treatment. I look forward with much interest to developments in adult life.

Another case which illustrates ocular symptoms associated with sexual difficulties beginning in childhood is the following. A lady, then thirty-five, was given + 2 Spheres for constant wear nine years ago. These made her comfortable. Four years ago the eyes again gave trouble. Owing to the war she could not consult me, and within a period of two years she sought the advice of six London oculists, and received six different prescriptions for glasses. The discomfort continued. Eventually I was able to examine her. The various prescriptions were compared, and small fractional differences in them were found. I invited her to talk about her emotional life. She graphically described a terrific struggle against masturbation since the age of nine, and from the age of twenty-seven homosexual relations with a woman older than herself, until she was over forty. Moral considerations had then caused her to abandon the life, and the eye trouble coincided with this period of renunciation. When I last saw her, she had returned to glasses which did not differ practically from those which had relieved her in the first instance.

In support of the view that the mental state of the patient determines the onset of symptoms from a practically unchanging error of refraction, is the periodicity of recurrence. Frequently it has been noticed that patients come for advice in the same month of the year, at intervals of several years. They are unaware that they have done so, and when their attention is drawn to the fact, they cannot explain it. The following case may be cited: A lady consulted me in March 1918 for headache and eye-strain of six months' duration. She had done so previously, in March 1915, and then gave the same history. Her health had suffered in other ways in the previous September. She knew no reason for this, but soon recollected with much emotion that she had been married twelve years previously in March, and in September had discovered that her husband was a chronic drunkard, and a ne'er-do-weel. Beyond the emotion shown, I have no reason for assuming that the association of her distress with those months had any bearing on the case; such an association has happened on so many occasions however that I am convinced that it was a factor.

Naturally these coincidences led to an examination of the type of individual affected by these stresses, and it soon became easy to distinguish between those patients whose eyes were a genuine source of discomfort, and those to whom the pinprick of a small error caused excessive reaction. The latter were one and all of the kind commonly known as the highly strung. Sensitive, inwardly shy, though outwardly very self-possessed, obviously shrinking from meeting the unpleasant side of life, often giving clear signs of physical bravery and moral cowardice, yet with a strong sense of duty and conscience which impels them to make efforts to overcome their ethical shortcomings, they are continually in a state of unconscious conflict. A glance at the face is sufficient to reveal their stresses to an observant eye. An appearance of anxiety frequently is present, whilst the tight lips and turned down corners of the mouth show the struggle for self-control, and the disappointing results thereof.

In order to determine what proportion of the cases had other than ocular symptoms, I asked all patients who came to me for glasses if they suffered from insomnia, depression, cold extremities, and giddiness, and in order to get some idea how they spent their unconscious hours, to what extent they dreamt. One hundred consecutive cases gave the following results:

13 were males, 87 females. This sexual disproportion is very significant. Six were under twenty years of age, 19 were between twenty and thirty, and 75 were thirty years and over.

Headache. In 16 headache was not complained of. 84 were affected, five very severely; the pain was often associated with other symptoms of migraine.

Insomnia. Only eight were satisfied with their sleep. 69 slept badly. 23 slept heavily, but were not refreshed afterwards. Morning headache was common in the heavy sleepers.

Depression. 93 patients complained of this symptom, and seven of them described it as very severe. In most of the cases the depression was of such a character as to make the patient eloquent upon the matter.

Cold extremities. 61 suffered from cold hands, and 78 from cold feet. A history of chilblains was common. Hot hands occurred in five cases, and hot feet in three. One woman who complained of cold hands, was much troubled by hot feet. It frequently happened that on the coldest nights in winter she was compelled to push her burning feet outside the bedclothes, before she could get to sleep. This unequal action of the vasomotor system needs further investigation.

Giddiness was present in 60 cases.

Dreams. 44 patients stated that they dreamt much, 35 only occasionally, and 21 said they never dreamt. It was noticed that the bad sleepers usually had nightmare, whilst the dreams of the heavy sleepers were generally of the innocent variety.

Judging from certain cases which were more fully investigated, a similar frequency of other neurasthenic symptoms would have been found in the patients who attend the ophthalmic out-patient department in such large numbers. An error of refraction could be found in nearly every instance, and glasses were prescribed, but it was with a sense of impotence to deal with the whole condition adequately, since the diseased state was clearly not local, but general.

In addition to giddiness, there is sometimes a definite fear of falling, accompanied by a sense of unsteadiness of objects looked at. Thirteen years ago I was consulted by a woman who suffered from such a fear. She had a moderate degree of astigmatism, for which glasses were prescribed. A month ago I saw her again. For years she has been completely helpless and horribly deformed, owing to rheumatoid arthritis. In a talk with her husband, I learned that after bearing two children, and before the disease had started, she had unaccountably become sexually anaesthetic. The disease started in the second and third fingers of the right hand. Can it be that the Freudian explanation of the fear of falling in dreams applies equally to this phobia?

It has become a habit to ask every patient with headache, and other vague ocular symptoms, "When did you have a nervous breakdown?" It is astonishing how often a history can be obtained. Want of adaptation in varying degree to the stresses of life can be observed in every case, and a serious want in a very large number. In this connection I would like to relate the following: A woman of about thirty went into a nursing home for a rest cure. She formed a strong attachment to her night nurse, who would sit on her bed during the wakeful hours, conversing on various matters. Suddenly one night they both became much moved, and found themselves in each other's arms in an ecstasy of sexual emotion. She was much ashamed the next morning, but the friendship grew. When she left the home, the relationship was broken on moral grounds. She was better mentally, but her eyes began to give trouble, and she consulted me. I prescribed glasses. A month or two later, I wrote enquiring as to her progress. She replied that she had relapsed, and was again going into a nursing home for a rest cure. I asked her when she first came, if her doctor knew about her experiences. She said "No," and refused to allow me to tell him.

Many, if not most of my adult patients have suffered from "neuritis," whatever that may mean. Scores of them have had abdominal operations for conditions such as floating kidney, and uterine troubles of an uncertain nature. Mucous colitis, disordered action of the heart, neuralgia, skin lesions, such as eczema and pigmentary disturbances, tics, chorea, wryneck, have succeeded each other at varying intervals. The alternation of manifestations of illness has not received the attention it deserves. A case illustrating it is the following. A young lady of twenty-six consulted me in February, owing to headache and aching of the eyes after reading for a short time. Examination showed that the refraction had not changed in the slightest degree since a visit five years previously. The symptoms had arisen in the previous December. In October she had complained of abdominal pain, and had been under observation in a nursing home for two months for suspected appendicitis, but the symptoms disappeared without a definite diagnosis having been made. Before this illness she had been suffering from neuritis in her arms, which in turn had followed some other ailment. She was certain that she had been perfectly well before the previous March. When asked if she had experienced any emotional stress at that time, she became much agitated, and declared that it was impossible to discuss or even think of it. It seemed to me possible that her various illnesses, for which no organic lesion had been found, served to express an unassimilated emotional experience. She has since married, and is now in good health.

Glaucoma.

The effect of emotion on glaucoma has been known for a long time, though the occurrence of the disease in later middle life has tended to obscure the frequency of the association. An interesting case is the following. A lady who had had an operation on one eye five years previously, suddenly developed acute pain in and around the second eye, whilst staying with her mother. Examination revealed no increase of tension, and a diagnosis of neuralgia was made. She was staying in the house of a medical man, who was interested in the Freudian theory. Whilst discussing dreams, she declared herself a disbeliever in their significance, and she was invited to put the matter to a practical test. She had had two innocent dreams. A superficial analysis rapidly brought both dreams to a consideration of the father, who was much loved, and who had been dead two years. The patient became emotional and suddenly asked that her eye should be examined, as it felt very uncomfortable. I saw her, found the pupil dilated and the tension raised, and operated upon her the following morning. Her mother, grandmother, and probably her great-grandfather had suffered from acute glaucoma.

In another case a man of fifty-eight developed acute glaucoma whilst returning from the funeral of his mother, who was over eighty years of age. He was successfully operated upon, but some weeks later reported that he was in a very nervous state, for which he could not account.

Unequal Pupils.

The action of emotion on the pupil of the eye is common knowledge, but the nature of the emotion is not always recognised. The following three unusual cases taken together point to a new field of research.

Some months ago a man of thirty-five was sent to me because unequal pupils were giving rise in the mind of his doctor to fears that serious disease of the central nervous system was beginning. He was a man of much vitality and energy, who had been wounded four times in the great war, and had escaped all nervous symptoms, except a stammer of a fortnight's duration after being shot through the stomach. In August 1920 his father died from senile dementia associated with arterio-sclerosis, and much of the nursing and control of the invalid devolved upon the son. The latter was an only child, greatly attached to the mother, but never on good terms with his father, whom he described as stern, strict and unapproachable. Soon after the funeral the mother noticed that his pupils were unequal, and commented upon the fact. In this instance the emotion was not that of unalloyed grief at the loss of a loved object.

The second case was a girl of twenty-three, whose unequal pupils were noticed by the mother immediately after the death of her father, a month before she attended the hospital.

The third was a woman of thirty-eight. The difference in the size of the pupils was seen by the sister on the first anniversary of the father's death, whilst leaving the shop at which they were buying a wreath to be placed on the father's grave, to which they were then going. The emotion shown by each of these two latter patients, during the recital of these circumstances, testified to the sincerity of the grief for the loss of the respective fathers. There were no other signs of derangement of the sympathetic nervous system. All three patients were in perfectly good health, as far as could be discovered.

Two cases in which muscle imbalance is associated with unequal pupils are mentioned later.

Watering of the Eyes.

This is usually due to obstruction of the tear passage. A case which suggests a more obscure cause is that of a lady of forty-five who came to me with a watery left eye. Examination showed that the tear passage was patent. The symptom dated from last August. She had suffered similarly on two previous occasions, the first being when she was twenty-two years of age. At that time she had had a serious difference with her mother, to whom she was much attached, concerning a certain friendship of which the mother disapproved. The breach in the relationship with the mother was the more affecting since it was the only time in her life that the patient had disagreed with her. The lacrimal passages were operated upon by her own doctor, and after some weeks of painful treatment the epiphora disappeared. Two years ago it recurred. The patient had been living with her mother during her husband's absence at the war. She had been married seventeen years. When the war was over, she left her mother to join her husband and the eye was watery for some time, but recovered without treatment. The third attack occurred last August, when the mother had a stroke, which endangered her life. Thus the symptom was associated on each occasion with a threatened separation from the mother, but the patient was quite unaware of the fact. It is perhaps unnecessary to add that the father had been an inconsiderable factor in her emotional life.

It will be noticed that in this instance no structural defect was found, but another case suggests a relationship between the sexual apparatus and disease of the lacrimal passages. A woman of thirty-five came under my care in 1914 for chronic suppuration of the right lacrimal sac. In 1915 the sac was excised. Six months ago, she again attended with an acute abscess of the left lacrimal sac, which had burst. Since then, she has had acute inflammation of the same sac on three other occasions. All the four attacks have occurred at menstrual periods. The second and third subsided with fomentations, but the last ended in the formation of a large and very painful abscess, which needed operation.

The nature of the infection has not yet been determined. It is worthy of note that at her periods she suffers much from headache, insomnia, depression, cold feet and giddiness, and has had a tendency to nasal catarrh at those times.

Squint.

About two years ago I began investigating the cause of concomitant squint. An increasing interest in the psychology of the child's first five years of life made me suspect that the deformity might be of the nature of a hysteria. It was impossible to get direct evidence of the cause. The onset of the defect at the usual age of two or three raised almost insuperable difficulties. The child could give no account of its troubles to a strange doctor, even if it were conscious of them, and the parents, for a reason which will become evident later, could give no help.

The peculiar onset of squint first gave an inkling that there might be some emotional stress at work. The deviation was not constant, but varied with the general well-being of the child. Its very origin could often be traced to a fright, whilst its appearance during or soon after an illness, such as measles or whooping cough, was suggestive. The parents often gave a history of its being present only during temper or other state of excitement, or of its being much increased in amount under these circumstances. Every oculist has seen a squint vary greatly during a short examination, and it may be presumed that the mind of the child is much exercised on such an occasion.

Again, the more frequent occurrence of squint in hospital as compared with private practice, leads to a consideration of the difference between the types of patient. It is largely a disease of the uneducated classes.

Thirdly, the frequently unsatisfactory result of treatment by glasses, fusion training or operation, the suppression of the vision of the squinting eye, the greater preponderance of convergent squints (it is much easier to converge than to diverge at will), the want of relationship between the degree of deviation and the amount of eye-strain present, and the tendency of the squint to disappear in adult life, regardless of treatment, are factors which have not yet been adequately explained.

Being unable to obtain evidence of mental stress from the child, I first studied its parents, and then its brothers and sisters, and after a time found that there was a definite relationship of squint to left-handedness and stammering. As far as I am aware, the only other observer who has noticed the association of left-handedness and squint is Dr W. H. Rivers, tuberculosis officer of the Barnsley District, who in an article in the *Lancet* of February 12th, 1921, drew attention to the fact.

He refers to the past work on the relationship of mancinism and stammering, but suggests no explanation of the phenomena he has noticed. His inclusion of tubercular predisposition points the way to a fascinating field of research. The psychological significance of left-handedness and its congener, stammering, has been appreciated by this Society, and the paper given last year by Mr H. Gordon on "Left-handedness and Mental Deficiency," together with the remarks of the chairman, Dr Henry Head, was very useful in helping me to formulate an explanation of the origin of squint.

It is desirable to state what is meant by left-handedness and stammering. The former includes all those persons who show a marked preference for using the left hand for any act or occupation, usually performed by the great majority of people with the right hand, such preference having been acquired voluntarily in childhood without any instruction or compulsion by the parents or others in authority over the child. Stammering includes all degrees from a slight inco-ordination in speaking, or an occasional but definite repetition of a syllable or word, to a pronounced stutter.

150 consecutive family cases of squint were investigated. In 13 the patient was a non-squinter, giving a family history of the three conditions mentioned. The remaining 137, comprising 76 females and 61 males, analysed below came under observation on account of a deviation.

131 had an obvious squint, and 6 had heterophoria (latent squint), whilst 13 gave a family history of squint.

Of the patients with definite squint, 117 were convergent and 14 were divergent. In 42 the right eye deviated, and in 62 the left. 15 had alternating squint, and in 10 the eye which deviated was not noted. 25 had squinting near relations.

In the 137 squinters and heterophorics, the father squinted in 5 cases, and the mother in 6, and 16 brothers and sisters were similarly affected.

Of the same 137, 86 gave a history of left-handedness in themselves or near relatives, comprising 122 individuals. 33 were themselves affected, and also 14 fathers, 8 mothers and 37 brothers and sisters.

Similarly 45 gave a history of stammering in themselves or near relations, comprising 75 individuals, and including the patient in 19 cases, 7 fathers, 2 mothers, and 38 brothers and sisters. There was also a family of six children, all of whom lisped.

In four cases the patient showed all three conditions; they were left-handed, they stammered and they squinted.

22 of the 137 were of one-child families.

In 14 cases there was a history of inter-marriage of persons affected by one or more of these states.

When the right eye was deviating, five patients stammered and four were left-handed.

When the left eye squinted, nine patients stammered, and sixteen were left-handed.

In alternating squint, stammering occurred in three patients, and left-handedness in six.

In heterophoria, the proportion was two stammerers to six left-handers.

The reason for including the heterophorics with the actual squinters will be seen from the following analysis of the cases:

No. 1 was the third of a family of five, whose eldest brother was left-handed, whilst the second child squinted.

No. 2 was slightly left-handed, *e.g.* she dealt cards with the left, and she was the daughter of an ambidextrous father.

No. 3 was left-handed.

No. 4 had a right eye which was amblyopic, and the father and one brother stammered. The patient was the eldest of three, and his brother and sister had normal eyes. He was noticeable for having an affection of the sympathetic nervous system; the pupils were unequal, the right brow was more moist than the left, and the right upper lid drooped, more especially when he was unwell. He left the Navy because he could not bear authority over him. He had never been on good terms with his father.

No. 5 also had an affection of the sympathetic nervous system; the right pupil was less than the left, and she blushed and perspired more on the right side of the face. The conditions were more marked when she was upset emotionally, particularly at her menstrual periods.

No. 6 had one brother who squinted, and another brother who was left-handed.

The numbers given may be regarded as minimal, as, subsequently to their compilation, I have interviewed personally the members of some of the families, and found definite though slight lesions not noticed by their relatives.

I think that it will be generally agreed that these figures are very suggestive, judging by everyday experiences with these phenomena, which can be observed by all. There has not been time and opportunity to get sufficient control figures from non-squinters, but the following results from a secondary school may have some significance. 33 boys and 32 girls of ages varying from fifteen to seventeen were interviewed.

Squint. There was no family history amongst the boys, and only one instance amongst the girls (mother's sister's child).

Stammering. One boy had a slight stammer when excited, and no other member of the 33 families was affected. The girls were more prone to this defect, since three stammered a little when excited, whilst six brothers and sisters were also affected to about the same extent. A history of its presence could be obtained in four other relatives, but in no case was the father or mother affected.

Left-handedness. Five boys and two girls were left-handed; also three fathers and two mothers, fifteen brothers and sisters, and ten other relatives.

The boys and girls in the secondary school were chosen from the elementary schools, *i.e.* the same class as the squinters, by competitive examination, one in five boy candidates and one in three girl candidates being accepted. It would seem as if the stammerers and squinters were left behind in the educational race.

It has appeared to me that the essential emotional difference between left-handedness and stammering is that the former comes from a desire to be different, whilst the latter results from fear. The impression given by squint is that it also is due, in many instances at any rate, to fear. That it is connected with the father very frequently, apparently with an inter-mixture of jealousy, has been impressed upon me many times by the simple ingenious stories of the mothers of the children, who have reported that the child was happy and healthy until the father came back from the war on leave, when its whole disposition seemed to change.

Dr Culpin tells me that when treating "shell-shock" he has frequently found that the men complained of a distressing intolerance of their children notwithstanding a longing to make the home happy. The children's egotistic desire to have their relationship with the mother undisturbed is thus intensified by the apparently antagonistic attitude of the father.

At first sight it would appear that the explanation of left-handedness by the theory of contrariness fails to account for the adoption of the habit by the child of a left-handed parent. Dr Culpin reminds me however of the possibility that the child recognises the fact that the habit represents the solution of a painful conflict in the parent's life, in which case the child's insistence upon copying the parent would be a sure way of showing its own desire for independence. Certainly all the left-handed parents with whom I have come into contact have disapproved of their children's not adopting right-handedness.

During the investigation of these cases, a relationship of acquired nystagmus and head-shaking to left-handedness, stammering and squint has been found, but has not yet been followed up. Two cases of nystagmus were seen, one of which was an only child, the daughter of a squinting father, whilst the other was one of a family of six, the eldest of whom stammered.

A lady of fifty-two had suffered for thirteen years from head-rolling and nodding, which began three months after the birth of a child. The confinement was followed by an attack of influenza. The movements were made worse by the shock of an accident five years ago. The patient has a divergent squint and her mother had head shaking. The child to which she gave birth is left-handed, but another girl five years older is normal. The patient's husband's father stammered when a boy, and the father's brother's son has an extremely bad stutter.

Turning to the psychological aspect, an outstanding feature of these cases has been the very frequent history of parental strictness of an oppressive nature. Where this has been absent, one or other of the parents has been unusually reserved and unapproachable. It has rarely happened that the patient has given a satisfactory account of the relationship with both father and mother. Most of the children were brought to me by their mothers, and the difficulty of obtaining trustworthy information on such a delicate matter is obvious. Although I have satisfied myself that the fault lies in the upbringing of the child, I am not prepared at present to quote the statistics which I am collecting.

As a rule, the attitude of the father appears to have been the determining factor, but in a certain number of cases, the mother was the stern disciplinarian. Certainly an unhappy or unequal marriage appears to favour the production of squint in the offspring. This deserves the attention of the psychologist and the eugenist. In several instances the influence of the parent was widespread, as the following case illustrates.

A woman of forty-one complained of several nervous ocular symptoms, of which the most striking was a blinking habit. She had had a squint which developed a year ago, during convalescence from an illness, and which disappeared spontaneously. She had fifteen brothers and sisters, all of whom stammered, whilst three of them were left-handed. The father had treated them all very severely, and she declared that she still bore marks of his brutality. She married a man who was a sexual pervert. He treated her cruelly, and she rejoiced when he died of typhoid fever. A healthy normal child was born of this marriage. Three years later, she married a man twenty years older than herself, who stammered. Two more children were born; one stammered, and the other was left-handed.

Another case closely associated with parental severity is that of a little girl of five, who was brought to me by her sister, aged ten. The younger child, who had a convergent squint, was cowed and shrinking, the older was more courageous and self-possessed, and able to give a vivid account of the situation at home. The father, a bully, showed his irritation at his child's squint by beating her, which made the squint worse. I took the child upon my knee, petted and comforted her, won her confidence, and in a few minutes the squint of about 25° had disappeared. Nor could it be induced again before we parted, although I conjured up a picture of the unhappy home to which she had to return.

Even more striking than the parental attitude has been the history of grandfatherly influence. The father's father very frequently has been reserved, narrow, strict and puritanical towards his children. Whenever the patient has declared that the father was kind and easy-going, it has been shown that the grandfather was overbearing and unreasonably masterful towards his son, and the latter's kindness is a reaction, a slackness in contrast to his harsh upbringing, rather than the expression of a frank open nature. The father is kind, but reserved, and it seems as if the child reacts to the undesirable environment which it recognises with unerring instinct.

I have already mentioned the tendency of these domestic rebels, if rebels they be, to seek one another in marriage. A striking case which shows this, and also the influence of the grandfather, is that of a girl who came under my notice at the age of seven, with a left convergent squint. She was hypermetropic and astigmatic, and was given glasses, which failed to cure the deviation, and an operation was performed when she was sixteen. By this time she had become myopic. The eye was practically straight after the operation. A fortnight ago she came complaining of discomfort in the left eye, which had "felt bad" for four or five months. During this time, she had been nursing her mother almost day and night. The mother died of aneurism in February last, and the girl, being lonely, married within two months.

She herself is left-handed. She stammers a little when excited, and has twitching of the left eye-lid. Her father was a "thoroughly bad character," and eventually deserted the mother. He was left-handed, and so was his father. Her husband is left-handed. His father is bigoted, and (I believe) left-handed, and they are constantly at loggerheads. When I asked for information on this point, the husband replied with a chuckle of delight, "I had a bad time with my father, but my old grandfather made things square with him, which is comforting to think about."

An interesting point is that the girl confided to me that she was not satisfied with her life. She found the restrictions of marriage irksome, being anxious to take up a career as a singer. The husband and his father have strong prejudices against the stage, which she considers unreasonable. Thus is the parental tradition, from which both husband and wife have suffered, carried on unconsciously. The prospect for their offspring is not pleasant to contemplate.

It will be noticed that the recent discomfort was referred to the left eye, with which she originally squinted; this eye stlll tends to converge and is not used. In this instance the squinting eye has good vision, but I have seen the same phenomenon when pronounced amblyopia has accompanied the deviation.

It is possible that in a garrison town, closely associated with the Army and Navy, the father influence runs to a severe discipline more frequently than in other localities. More than one mother has said that her husband could not help being a drill sergeant at home as well as in the barracks. A few months ago, a naval captain asked my advice about his little son, who had an occasional squint. He could not bring him for examination, as his family was living at a distance. I astonished him by asking which of his children stammered, and what was his reputation as a father. He replied that he had one daughter who stammered, but only when he spoke sharply to her, and that his wife had complained quite recently of his quarter-deck manner towards his children. I also asked whether the boy's squint began the day after he returned from a voyage. He answered, "No, it was the evening before."

Many times during the investigation of these cases I have come to the conclusion that they represented instances of the Oedipus complex. At other times it has seemed that a will to power lay at the bottom of the trouble. Under a hysteria might exist a definite motive, sometimes to gain a privilege which was otherwise inaccessible, sometimes to give offence and be tiresome and obstructive. Two possible instances of the latter may be those of two girls, one twenty-three, the other sixteen, who are not only left-handed, but when cutting their food, frequently and quite unconsciously use the back of the knife, having to be reminded of the fact, either by onlookers, or by the want of effect in the cutting. One of them has the capacity of producing left ptosis at will. She never got on well with her father, but was very fond of her mother and elder sister. I saw her fifteen years ago and ordered glasses for hypermetropia, which were lost three months later and never replaced. She now thinks it highly probable that they were lost intentionally. Her symptoms therefore may have been another exhibition of her desire to get attention without honestly earning it.

An interesting case is that of a boy of eight, who was left-handed. He has an amblyopic left eye, though no history of squint can be obtained. For some mild misbehaviour he had been reproved by his father, and promptly replied by declaring that he was blind in his left eye; this worried his father greatly. On examination I found that the boy had left vision = 6/24. The father, a keen cricketer, was rather proud of his son's left-handedness, and encouraged it, in order that he might be a left-handed bowler. The boy has now become right-handed.

It has seemed to me that each child is born with an imperative need of two kinds of affection, the one masculine, and the other feminine. Deprivation of one or the other leaves the child lop-sided in development, and a moral kink may be the result. The child of a really happy, well-balanced marriage, where, it may be presumed, the parents themselves are free from infantile fixations, appears to avoid the before-mentioned neurotic manifestations. It is fairly easy to recognise their more unfortunate fellows. Why the eyes should reveal so much of the character is not clear. It may be because they are the channel of so much of the communication with the outside world. In some cases, doubtless, their significance as one of Freud's erotogenous zones must be acknowledged, but this matter must be investigated by the psycho-analyst rather than by the oculist.

MARY ROSE.

A STUDY OF THE INFANTILE PERSONALITY[1].

By CONSTANCE LONG.

It is no insignificant fact that two such plays as Barrie's *Mary Rose* and Maeterlinck's *Betrothal* should have appeared on the London stage at one and the same time. Both deal with aspects of the unconscious mind, a subject which has become of vital interest to us during the last few years. When vital movements of a general character appear we can always discover that there have been *forerunners.* To go back only a few years we find among notable ones Von Hartmann, Samuel Butler, Du Prel, F. W. H. Myers, and in the present day Janet, Bergson, Freud, Jung, and many others far ahead of the general movement, already presenting their scientific and philosophical observations, forming theories and concepts which help to explain and forward the new perceptions.

At such a time a parallel movement can always be found in the art of the day. Poets interpret the unconscious to us and by their expositions prepare the way for the forthcoming truths. *It is the unconscious mind itself that has become important to us of late.* Interest in the unconscious may be either sensational or scientific; it can be materialistic or spiritual, whether it is applied to dream interpretation, ancient religions and cults, or occult phenomena. In its profoundest meaning it is a longing for a fresh revelation to replace the old values that have fallen so markedly into disrepute or desuetude, and for a new attitude to life.

Equally significant with the marked interest in the unconscious mind are the resistances aroused against it. At least a part of the outcry against Freud's theories arises not only from resistance to sexuality and its formulations, but also to the dread factors in the unconscious mind. Nearly every person first approaches the unconscious with suspicion.

There are very excellent reasons for the fear of the unconscious. It is a good friend, but a very bad foe. Barrie, in the drama under discussion, has given us an inimitable picture of it, while portraying one of the very most fundamental problems in individual psychology, namely, the persistence of the infantile personality. It is the Oedipus myth in modern form, and deals with the intermingling of the fates of the parent and child. In this play it appears we have something greater than we can yet estimate; the dramatist has given a form to the modern problem of the estimation of the unconscious.

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[1] Read before the Medical Section of the *British Psychological Society,* March 23, 1921.

I suppose that the story of Mary Rose is well known, even if everyone has not seen the play; I make no apology for leaving many gaps in its recital, and will speak only of what is strictly relevant to my theme. I speak from memory of the performance, as the play is not yet available for the reader.

It opens with the visit of a young Australian soldier to the home of his childhood, from which he ran away when he was twelve years old. The house is empty and mouldy and in charge of a scared caretaker who has become half-crazed on account of the terrible things she has experienced in this now haunted place. The soldier, Harry, is determined if possible to penetrate the mystery of the house. He establishes relations of tolerance with the caretaker, and after a talk with her, sits in the empty drawing room by a fire which he lights to dispel the clammy atmosphere, while she goes away to fetch him a cup of tea. She is away for ten minutes, as we are specifically told, and during that time the events which lead to the desolation of the house pass before him.

It transpires that the soldier, a man of twenty-seven, is Mary Rose's son. She is the heroine of the soul tragedy of which he is witness, and with which he fills up the gap in his knowledge of the events that have taken place in the house during his fifteen years' absence.

Mary Rose is a singularly lovable girl, whose tendency to absent-mindedness and momentary alterations of personality is hinted at from time to time in the play, as when for instance she becomes suddenly hallucinated in the midst of her talk with her lover, by the figure of the "little old woman" whom she sees for a second and describes as "a queer one."

At twelve years of age Mary Rose was with her parents on a visit to the Hebrides. While her father fished she sketched or played upon a little island called by the inhabitants "The Island that likes to be visited." The natives regarded the island as a magic one; they said that it never ought to have been there; that it appeared in a night. Cameron the boatman, who tells its history, pointed out that no birds were ever seen upon it, and that the vegetation was entirely alien to that of the neighbourhood. The native folk never landed upon the island because it was told amongst them that people had been spirited away from the spot. The English visitors however took no notice of the local legends, and visited it constantly. Mary Rose, particularly, loved it so much that it seemed to be akin to her very soul.

On one particular day Mr Moreland, the father, came as usual to fetch his little girl. Although before he left the mainland, some one hundred yards away, he had exchanged a signal with her, on his arrival at the island she was nowhere to be found, nor was she seen again till thirty days had elapsed. We are allowed to know in the play that she had disappeared in response to the call of enchanting music, music "only heard by those for whom it is intended," to whom it speaks with an irresistible appeal. Thus she disappears for the first time into the unconscious, that is, into the region of dreams and phantasies.

It was only as the distressed parents were about to leave the place after a month's fruitless search and speculation, that the child was once more seen upon the island. The father rowed from the mainland to fetch her, and immediately discovered that she had no idea of the lapse of time, or that anything unusual had happened. The parents were if possible more mystified by her re-appearance than her disappearance, and at a loss for an explanation themselves they resolved to tell her nothing of the affair. They decided however that if ever a lover appeared and wanted to marry their Mary Rose, he must be told.

When first we see her on the stage this incident is already several years old. A lover has already appeared. He is a young naval officer, Simon Blake by name, and we learn from the parents' conversation with him all the circumstances known of this curious episode in Mary Rose's life. The parents impress upon their future son-in-law that the story must never be revealed to her. The only difference they can detect between their child and other girls is that she is young for her age and disinclined to grow up. They say that sometimes quite casually she would become absent-minded, and speak to someone who was not there, but before they could question her, the door of the alien world into which she momentarily looked was closed again. We should say in analytical psychology of such an episode, that the open door led into the collective unconscious.

The only one of Mary Rose's phantasies of which we get word is that of the little old woman already referred to. This "queer one" must have been the witch or gipsy, a grandmother or sorceress with whom we are familiar in myth and folklore. She is the possessor of magical powers and has the secret knowledge. This archaic image personifies the lure of the unconscious on its dread side, the beckoning of the Mother-Deep, an idea which is in complete harmony with subsequent events of the drama.

The next scene in the play shows Mary Rose a few years after her marriage. She is now the mother of a little boy of nearly three years. By means of the fanciful talk, half playful, and half plaintive, which passes between the young couple, we find that they believe themselves to be happy and united. We learn that they have never yet had a house of their own and, on account of Simon's long absences with his ship, they still make their home with her parents.

Mary Rose has persuaded her slightly reluctant husband to spend a holiday in the Hebrides, and now having left baby Harry on the mainland, they have actually just arrived and are picnicking on the fateful island. Mary Rose's satisfaction at finding it again is very great; and the husband, who has evidently come to regard the story of her disappearance as a dream on the part of the father, is only very faintly conscious of any anxiety, and is not even stirred to special watchfulness. The only anxious member of the party is the Highlander, Cameron, boatman in summer and divinity student in winter. He tells weird tales of the island, among them the actual story of Mary Rose's disappearance, although with certain inaccuracies of date. In spite of the fact that Simon is obviously made uncomfortable by the tale, his impression of fear soon passes, or is submerged in his extreme anxiety to keep the slightest foreboding out of the mind of his child-wife. They behave and talk like two happy children, and play their way into the real tragedy. For at a moment when her companions are not attending to her, Mary Rose hears the magic music, and following its compelling sweetness is caught away—this time for twenty-five years.

The most poignant moment in the play however is when at the end of a quarter of a century, having been found once more upon the island, Cameron, the boatman of yore, now a minister of the place, brings her back to her parental home.

She is no more changed outwardly than if she had risen up after a single night's sleep, but we find that her mind has become disorientated. She cannot grasp the idea of the lapse of time, nor understand the appearance of age that has come over her parents and husband. Her one anxiety is about her baby. It is of him she rather incoherently and brokenly implores everyone to tell her. Those who love her have no words in which to convey to her that if he still lives he is now a grown man, and that they do not even know where he is. For her the intervening years are void of meaning; between herself and her family there is now a great gulf fixed. No one is able to tell her the truth, no bridge can be thrown across the unconscious years that divide them. She is an alien, who wakes from her dream of twenty-five years, incapable of making any new adaptation, having left her libido in the past and in the realm of phantasy. The measure of mind that is left to her serves only to recall dim memories of her lost infant.

In the opening scene the caretaker had informed Harry that she was "dead," and when we see her in the last scene it is as a ghost haunting the old home, always searching, searching, for something that is hidden from her, and of which she has but the dimmest idea. She hardly knows that she is still looking for the child she lost sight of so many years ago. Her aspect is quite inimical to the living beings whom she encounters from time to time, if she thinks they are keeping from her the object of her search.

Of ghosts Barrie says in an earlier work[1]: "The only ghosts I believe who creep into this world are dead young mothers, returning to see how their children fare. What is saddest about ghosts is that they do not know their child. They expect him to be just as he was when they left him....Poor passionate souls they may even do him an injury. I know a man who, after wandering far, returned to his early home to pass the evening of his days in it, and sometimes from his chair by the fire he saw the door open softly, and a woman's face appear. She always looked at him very vindictively and then vanished. Strange things happened in this house. Windows were opened in the night. The curtains of his bed were set fire to. A step on the stair was loosened. The covering of an old well in a corridor where he walked was cunningly removed. And when he fell ill the wrong potion was put in a glass by his bedside, and he died. How could the pretty young mother know that this grizzled interloper was the child of whom she was in search?"

If we take these words of Barrie's literally, which I think is not justifiable, we might suppose that in his view the young mother who dies takes her libido for the child with her, and with it is able to project herself into the world she has left. Analytical psychology on the other hand would see in this symbolically true picture a personification of the longing for the idealised mother that persists in the adult man, and which indeed survives in every living being to a greater or lesser degree. Under certain conditions connected with repression, this mother image may become a complex, split off from consciousness, having a life of its own which makes it capable of re-appearing as an automatism. Concentration of passionate interest, albeit unconsciously, on the mother imago renders a man liable to many so-called accidents; namely those events in life to which his pre-occupation with phantasy, and his indifference to the reality principle expose him. In this view the ghost is a projection of the unconscious incestuous wish, and is a creation of the man's own psychology.

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[1] *The Little White Bird.*

We find a similar motif in Ibsen, in whose idea a ghost is the haunting persistence of the unanswered question and the unsolved problem.

In Barrie's work a universal problem is dramatised, and one which is of supreme importance in the development of each individual. Mary Rose portrays very pertinently the meaning of psychological incest, that is the unconscious adaptation to the parents, with its resulting bondage to the family, and the stabilisation of the infantile personality. The infantile personality is the product of the unconscious wish to remain a child, and the pursuit of the pleasure principle in lieu of the reality principle. For many people this problem always remains in the unconscious. Mary Rose's parents were themselves victims of it but never realised it. The fruits of this regressive tendency to the mother are seen in a narrowing of the personality, and an irresponsible attitude to life. Unsuitability of behaviour shows itself in foolish tricks, petulance and impatience, intolerance and rigidity, self-love, preference for old ways and scenes; old thoughts, old feelings express themselves everywhere. There are, for example, physicians who cling to obsolete modes of treatment, professors in bondage to effete values, priests who teach outworn creeds, scientists who are bound by old hypotheses, business men who use antiquated methods, teachers who resist innovations, and lovers who remain with old dreams.

Nothing is bad *because* it is old, but all old things are bad which have no value for the growing life of the individual. In all its aspects growing life entails that the inner movement shall keep pace with the outer requirements. If this is not accomplished, failure in adaptation occurs, which may manifest itself in neurosis, dissociation of the personality, or complete alienation of the mind. Such manifestations differ in degree rather than kind.

French and American psychologists and others have made us familiar with the subject of multiple personality existing in one and the same individuality, and we constantly see the effects of somnambulisms and changes of character. The shock of the war has been the occasion several times of the letting loose of a character unbelievable to former friends and acquaintances. But we all know what it is in different circumstances to "feel like another person." We see children who are solemn owls at school behaving like little imps at home. We know of voluble professors who are dumb in society, and of strong men who become powerless in the presence of a woman. We present many faces to the world corresponding to many attitudes of the soul. These changes are so much a matter of everyday life that we regard them as normal. We are all agreed upon the tendency of the mind to dissociation; and we cannot fail to observe that the severance will always occur at weak places of junction, and will follow lines already laid down for it in the psyche.

If we view this phenomenon from the energic standpoint of analytical psychology, we say that under the stress which the obstacle in life places upon the libido, it must either make a movement forwards and find a solution of adaptation to life, or it will inevitably regress to old channels and light up a former mode of adaptation no longer suitable.

Child and mother are the opposite ends of a continuum which can act ambivalently; that is, the mother can stand for the child or herself, and the child can stand for the mother or itself. The accent of value can be displaced in either direction and yet relate to the same problem. Ambivalency, though normally present, is particularly active in neurosis. In the normal it promotes adaptation by providing a compensatory or balancing quality to mental activity; but in neurosis one is subordinated to a perpetual alternation of values. The neurotic is torn asunder by, or identified with, the pairs of opposites; the mechanism of ambivalency is made use of perpetually by the unconscious.

The child feels the mother to be her goal, and indeed motherhood is a goal for every girl, just as fatherhood is a goal for every boy. Hence honour to the father and the mother always appears a duty and a virtue, which affords unconscious satisfaction to the self. But those who never break free from father and mother never can accomplish the goal of the father or mother in themselves. This is not a new point of view, perhaps it was not even new two thousand years ago, when it was said: "I am come to set a man at variance against his father and the daughter against her mother."

We must then approach the problem under discussion from two sides, namely from that of the parent and that of the child. It is the privilege and duty of parents to assist in the mental liberation and growth of the child, but in so doing they cut off the branch upon which they sit. But the parents of Mary Rose positively betray their child to death, in their refusal to give her her own problem to deal with. Thus they refuse on their part to liberate the infantile personality.

The child is only too ready as a rule to acquiesce in this, for she does not really want to grow up in the inner sense of the word, for that would mean taking up the problems of maturity and independent life, and following the dread path of individuation.

Moreover in retarding the child's development the parents not only rob the child of her birthright but rob themselves also of their appropriate task, namely that of *growing* old, which is quite a different proposition from that of *getting* old. The growing old is something they owe to themselves and to the young generation.

Mary Rose's first breakdown occurred when she was twelve years old. With unfailing intuition Barrie pitches the psychic conflict at its right moment in the pre-puberty stage. The phantasies relating to puberty pre-date the actual onset of the menstrual function.

With equal precision Maeterlinck pitches Tyltyl's adolescent problem at sixteen, the age at which the Fairy Berylune introduces him to speculations and adventures concerned with the choice of his bride, adventures which he follows in the company of Light in the now "real" world of the unconscious. In Maeterlinck's drama *The Betrothal* the phantasies Tyltyl follows or enacts have a prospective meaning and lead to expansion and life. In *Mary Rose* the phantasies are retrospectively or regressively followed, and lead to contraction of the personality and death. In the one as development and individuation proceed, Destiny diminishes in size and power. In the other the tragic heroine grows more and more childish and unreal, the "chancy thing" as Cameron calls it befalls her and she is swallowed up by the "Terrible Mother" of the unconscious.

Mary Rose's absence is only comparable to a prolonged lapse into a secondary state of consciousness, or into psychosis or mental alienation lasting for thirty days or twenty-five years. Her return to the world is not unlike a return to ordinary life after a prolonged absence in an asylum.

The author of the play is not bound by the limits of actuality. He may take a poet's licence and dispense with any bodily sign of Mary Rose for as long as his art requires. But when we deal with a concrete case we have to keep the psychic truant in our midst, and can only dispose of her in such a way as I have indicated. The drama can only truly portray the soul side of the problem. It is a drama of the world within one individual soul. It depicts something that is psychically true just as a dream depicts a problem, and I have given it an interpretation on the subjective plane, which Jung has taught us to value so highly for the prospective meaning of unconscious products.

The event which Barrie dramatises is one which happens in four dimensions as it were, and he alone of all playwrights could have given us just such a piece of art as this, and represented it so completely in three. From the standpoint of psychology it is all within the bounds of possibility.

Maeterlinck's device for portraying the unconscious is much more self-evident. Tyltyl turns the magic sapphire which he wears in his cap; the magic cap is a prevalent mythological motif. Mary Rose has no control over her fate; she is a victim, a hapless Iphigenia sacrificed by the father, with no friendly Artemis to place a substitute upon the altar.

What has happened to her is that she has taken a flight from reality for the purpose of evasion. If this evasion remains unconscious the essential psychic adaptation of puberty is not made. The external development is compensated by day-dreaming and phantasy, and the feelings remain on an infantile basis, which forbids real participation in the common human experience.

Mary Rose is the girl who will never grow up of her own free will and she passes ever as a lovable child amongst us. It is true she married and bore a son, but she remained in the paternal home all the time. Her very first request to her lover was that she might if she married be allowed to go out and play sometimes. His ready acquiescence in her attitude is early seen; you remember when after their engagement has been sanctioned Simon says to her: "My child, you are in my care now, I order you to put on a jacket"; she turns to him delightedly with the reply, "Lovely tyrant, you do say the sweetest things."

The second attack of trance-absence overtook her at another epoch when an important new adaptation was required from her. Her baby was nearly three years old. How much longer could this girl have carried on her life of play? How could she who was still identified with nature (*vide*, her play upon the island), and indiscriminately with the rôle of mother or child, develop further to meet the demands and growing needs of her boy, or cease herself to be a child? She was too sensitive to escape the effects of the unconscious conflict unharmed. She could no longer play at maternity as a child plays with a doll, hence when life laid upon her the burden of becoming mature, and bade her become an equal companion instead of a plaything of her husband, the second summons came from the unconscious, and she succumbed to it. Her passion for the child-rôle is revealed in that moment when she says to her husband "the happiest time of all will be when Harry is a man and takes me upon his knee instead of my taking him on mine." She reiterates these words in the final scene, when as a ghost she accomplishes her wish.

Here we must contrast Mary Rose's problem with that of her own mother. Mrs Moreland played the mother-rôle all her life, not only with her daughter where it was of course appropriate up to a point, but also with her husband, her husband's friend, and her son-in-law, whereby she unconsciously fastened the fatal child-rôle on all those about her. We cannot be surprised that the Morelands were nonplussed by the extraordinary fate that overtook their child. Unable to understand it themselves, they withheld all the circumstances from her. Thus for her it always remained an unknown danger, and she was unable to safeguard herself against the later catastrophe.

They hoped for the best, and in the belief that they were consulting the best interests of the child, took the path of least resistance, and saved her, and incidentally themselves, from the pain and difficulty of an explanation. Although they had often witnessed her tendency to sudden short lapses into an unusual state of consciousness, and though they recognised the childishness of her character, they were never able to bring themselves to tell her of her early strange adventure; all they could do for her was to "love her more than other daughters are loved." However they decided that if a suitable suitor appeared *he* must be informed. They would have thought it dishonourable to keep him in the dark about his wife, whereas they did not recognise that their silence to the girl herself was equally culpable. Unconsciously they must have felt that being one of such an intimate and happy family their interests were identical. For them she simply shared a family soul so to speak, and had no needs or individual rights of her own.

The parents in this particular case could take no other course, their line of action was determined for them on account of their bondage in psychological incest. *They were in love with the child.* This is the other end of the incest problem. Their attitude came through lack of differentiation and discrimination. Individuation as a principle of life had played no part with them, they had never in their own persons overcome their original family complexes. Mrs Moreland is a personification of the imago of the ideal mother. Barrie constantly draws her portrait for us. She is a tender seductive woman, who by the sweet poison she instils paralyses and binds those under her immediate sway. She is a woman who loves to have nothing but children around her, over whom she reigns as queen. The three men in the play with whom Mrs Moreland comes in contact are all in a more or less childish relation to her. The woman who is always a mother to men, by a mixture of tenderness, flattery, and well-dispensed maternal discipline, keeps them in adoring submission. She is at one and the same time Helen's rival and her greatest abettor. Her typical attitude is seen at that moment where an inner discontent arises in her husband's mind. He complains that he has failed to take life seriously, and has always been concerned with trifling things, and in a moment of self-realisation declares that a suitable epitaph for him would be: "In spite of some adversity he remained a larky old blade to the end." He determines he will remind himself of his irascibility by going without his pipe, and of his vanity by going without a new dress suit. In the twinkling of an eye the maternal arms of his wife are round him, he is to be soothed with a comforter, and clad in "glad rags." He must not even at this late hour come to know himself, though he is nearly seventy; the wife must play the rôle of the charming mother to the end.

Thus unconsciously has she created the domestic tragedy. No longer beautiful, because no longer suitable, her attitude enslaves, and keeps herself and all human beings around her infantile. The evil effect of her gentle tyranny is seen in Mary Rose, for neither she nor those whom she has seduced, can meet the actual needs of the dream-ravished child.

The father's problem in this case includes the repression of his thinking function. He refuses to think about life. He rejects the male task. His attitude is summed up in his words to Cameron: "Please don't talk of it; I have been occupied all my life with such little things. Do you think she ought to have come back?" For the infantile character nothing that disturbs serene existence "*ought*" to happen. There ought to be no irrational occurrences, no sex problems, no revolutions and no death, and most of all no resurrections. For such, all ought to happen according to the wish; an end that can only be fictitiously accomplished through phantasy.

A last word must be said, and that relates to the son. His activities throughout seem to compensate the mother's. We note that he ran away at twelve, the age at which his mother had taken her first flight into the unconscious. Harry was reared by his grandparents. Of his father he would naturally see but little on account of his long absences at sea. Of their relations nothing is told us save that Harry as a child thought him very severe. We have to surmise what the spirit was that arose in the lad which pushed him away from the stifling love that had been the bane of his mother's life. He was bound to work out his mother's unfinished problem, for as Jung has pointed out the child is forced to make up in some way, either by neurosis or extra exertion, for what the parents fall short in.

Harry ran away to sea, perhaps in conscious imitation of the father, thus following the reality principle; but unconsciously he was seeking the mother. Mythologically the sea stands for the maternal waters and the mother-deep of the unconscious. From the mother the hero is reborn out of introversion, and in following the "categorical imperative" and the urge to individuation, expresses his desire to be and do something, and assume a form of his own; hence a new attitude to life arises.

Mary Rose fled from reality, Harry's flight took him into the world of life and men. Mary Rose became ethereal, disorientated and dissipated into the collective unconscious. Harry became vital, coarsened, and welded into life. The moment he returns to his English home he gets right into the heart of the problem. His first contact with his mother is with an angry ghost. For a moment he is in great danger from her, although he is only aware of the fact later. She stands behind him in the dark with his own knife in her hands. The knife here is a fine symbol of the weapon of the will, which should be in his own hands and not in those of the mother.

I must not omit to speak of the Freudian symbolism of this weapon. The knife I take it would be accorded a phallic significance. It would represent the concrete incest wish; a real sexual desire towards the mother. This concrete interpretation seems to me less related to life itself than the one I have given. This man does not want sexual relations with the mother, he wants to find himself, for which reason he must be re-born from the mother. The weapon in question is his tool, his means of overcoming his enemies. While it is in his mother's hands he is defenceless, his individuality is in danger of being killed: in his own hands the knife provides the wherewithal to accomplish his conflict. This symbolism of the weapon in the hand of the hero is of such universal and ever-recurring prominence in mythology as to warrant it as an archetypal or primordial image.

Presently he recovers the knife, and though clearly he is not devoid of fear and uncertainty he proceeds to handle the extraordinary situation with courage and discrimination.

When he first meets the caretaker his attitude of mind is careless, he is curious, but with no foresight of what awaits him. He quietly overcomes his natural levity in the presence of her evident suffering, and realises that a comely young woman, such as gossip reports her to have been, does not become old-looking, scared and distraught for a trifle. In spite of his nonsense about "My Cabbage," and "winning the war," he displayed a reverent spirit before irrational facts which he could not understand. He listens. He thinks. His contact with a ghost, and that ghost his mother's, though uncanny, must be understood if possible.

There is sympathy in him as well as reverence for a "poor ghostie" whom he wants to help but does not know how. He proceeds feelingly, and with intuition. In fact to the best of his ability he summons the four chief functions of the psyche, namely thinking, feeling, sensation and intuition, to his aid, and in so doing acquires an objective relation to the problem, and so destroys the spell of the unconscious. Thus he releases not only his mother (his subjectivity) but himself. By overcoming his infantile attitude the unconditioned power of the mother imago is rendered null and void, illustrating the psychological truth of the idea that "whose soever sins ye remit, they are remitted unto them; and whose soever sins ye retain, they are retained." Harry will no longer be found amongst those adult children who blame their parents for every evil chance that befalls them.

He teaches Mary Rose to call him "Harry," and in some mysterious way she seems to become aware that he is, or does replace, the baby she has lost. For the last time the magic music is heard, and she goes back—or on—into the limitless unconscious. She fades out into the night, once more gathered to those collective things from which she never really detached herself. Once more she disappears, and a star falls from Heaven to indicate that a ghost is laid, that a soul has passed away; and shall we not say that another soul, which is the equivalent of a new attitude, has established its claim upon life, and lives on in the person of the son.

Thus in the drama of *Mary Rose* the complete cycle of the problem of the infantile personality is put before us; nor, in my opinion, is the solution withheld.

REVIEWS.

Addresses on Psycho-Analysis. By J. J. PUTNAM, M.D., Emeritus Professor of Neurology, Harvard University. Preface by SIGM. FREUD, M.D., LL.D. Published by The International Psycho-Analytical Press. London. Vienna. New York. pp. 470. One portrait plate.

The founders of *The International Psycho-Analytical Library* are to be congratulated very heartily on this their first volume. Professor Putnam's writings have been well known to all students of Psycho-Analysis for the past decade, and it is very fitting that the more important of his writings and addresses should be collected into one volume, after his death, as a permanent record of the faith that was in him in reference to the teachings and work of Freud. The main importance of this book lies, perhaps, not so much in the subject-matter of the papers themselves as in the revelation of the personality of the author which cannot fail to be carried away by every reader, be he trained psychologically or not—a revelation confirmed and strengthened by both the preface contributed by Professor Freud and the obituary notice by Dr Ernest Jones. I know of no better testimony to the value of the whole Psycho-Analytical movement than the writings and utterances of Dr Putnam, when they are judged with full appreciation of his life-history, professional standing and environment. For over thirty years Professor of Neurology at Harvard University, Dr Putnam's reputation as teacher, writer and clinician had been founded on his knowledge of nervous diseases viewed from the organic standpoint; and it is some evidence of the strength of his convictions that the last fifteen years of his life were devoted almost entirely to the study of Psycho-Analysis, and to the testing of its principles in his clinical work. Dr Putnam's addresses are characterised throughout by clear reasoning, sound critical judgment and sturdy idealism. Although a staunch believer in Freud's work, within the limitations to be referred to presently, his critical faculty is never in abeyance, and the test of clinical experience and therapeutic result is always very clearly before him. The paragraph on page 53 might well be borne in mind by many critics of Psycho-Analysis: "It should be realized by every fair-minded person that in judging of the work of this growing school of able men, a separate estimate should be made; first, of the method which they use, next, of the conclusions which they reach. The former, at least, is of immense value for the ascertaining of a sort of truth hitherto concealed. Let the method be conscientiously followed and the conclusions will need no special advocacy."

A fuller criticism of the work under review falls naturally under three main headings: (1) papers dealing mainly with the general principles underlying the Psycho-Analytic movement and the critical study of the Freudian position; (2) those dealing with clinical cases drawn from the personal experience of the writer; and (3) those devoted to the philosophic and metaphysical conceptions characteristic of the author's personal views as to the scope, the limitations and the possible future developments of [illegible] Psycho-Analysis.

The papers coming under the first of these headings are undoubtedly the most stimulating and the most interesting. It is not so much that there is, in the subject-matter, anything new to anyone at all conversant with psycho-analytic literature, but that in the presentation of his conclusions there is throughout a clearness of vision, a grasp of essentials, a logical sequence of thought that is stimulating and convincing. Dr Putnam has one end in view—to convince his audience and readers that Freud's work has given to the world a new method of investigation into the motivation of human thought and conduct, and to the medical profession a new insight into the meaning of mental and nervous diseases, the scientific value and truth of which can never be ignored or denied by any honest observer in the future. The criticism of the work of Adler is a good example of clear reasoning and judgment, and his final rejection of Adler's position and also his criticism of Jung give evidence that his acceptance of the pre-eminence of the Freudian view was not attained to without full inquiry into other schools of thought.

Loyalty to the genius of Freud is evident throughout, and two passages may perhaps be quoted in this connection as being characteristic of the author and worthy of wide publicity: "The lessons of loyalty are readily forgotten. It is very easy and enticing, after the first flush of enthusiasm for the work of a great leader has somewhat passed away, and lesser men begin to come forward with sharp criticisms and with generalizations that claim to be original but that shine really with reflected light, to transfer to these men the allegiance which is still, in reality, the leader's due" (pp. 337–338). And again: "If observers coming after Freud, and using either the same method or another of equal or greater value, find reasons to arrive at conclusions different from those which he has reached, they may doubtless prove to be benefactors of science or their race. But it is certain that their own conclusions will be of little value, and their method not one to be recommended, if in reaching the former or employing the latter they are led to set aside as worthless or as needless the facts and deductions which this clear-eyed observer had set down as true. New doctrines may go further than old ones, and may absorb them and give to them a different meaning. But unless the old doctrines were false in the sense of having been made by a man who was false to his own sense of accuracy and truth, they surely stand as data to be explained or dealt with with respect" (pp. 338–339).

Those papers in the series which deal with actual cases treated by the Psycho-Analytic method, interesting though they be, are probably the least valuable in the volume. All psycho-analytic cases are notoriously difficult to report fully, and naturally Dr Putnam's earlier ones demonstrate little more than the experience that even a short analysis of a suitable case will give evidence to both analyst and patient of the validity of Freud's main conclusions.

The "Sketch for a Study of New England Character" is certainly, in my opinion, the best of the clinical series. It is interesting to note that Dr Putnam makes little mention, except in Chap. XVIII, of the all-important subject of transference, and I think there is evidence in some of his cases that the stage of positive transference was perhaps not sufficiently recognized by him. This is not surprising if we bear in mind the character traits that are so well brought out in the obituary notice by Dr Ernest Jones.

The philosophical and metaphysical sections are interesting mainly for the insight they give into the personality of the author, and it is noteworthy that Dr Ernest Jones states definitely that he knows of no other instance in which philosophical views have not become placed in the service of some or other unconscious resistance. The following paragraph sums up, I think, the philosophic creed which is so vital to Dr Putnam in spite of his frank recognition that Psycho-Analysis has no direct concern with ethical standards or moral values. "But it should be clearly known that the patient's mind contains also a variety of other data which he is not likely to bring to light, yet which it is vitally important for him to recognize, if this can be brought about without detriment to his progress, as significant sources of motive. Such matters are certain inherent "moral obligations," which everyone who will listen to his own conscience will find that he feels, first, as a member of the "community," in a widening sense; next as a virtual member of an ideal community, or—if one will—of the universe. I will waive the question whether the psycho-analyst ought to bring these matters definitely to the patient's notice (though I will say that I believe one reason this obligation is not felt is that the first-mentioned obligations are not believed to exist as such); but it is certain that the psycho-analyst cannot be thoroughly competent for his task unless he has them in the background of his mind. And I believe that the time will come and is at hand, when it will be found that the physician can often act in both ways as helper to his patients, without either the loss of self-respect or failure to perform both tasks adequately. The universe is not, as I believe, founded in logical "reason" alone, much less in "scientific" reason as that word is usually understood. Moral intuition also plays its part, and probably discovers its right to do so because of inherent necessities and not solely because of utilitarian adjustments" (pp. 446, 447). This is a sturdy confession of faith, and in spite of all its implications it is not without value, coming as it does from one who was so many years a protagonist of a system of psychological inquiry which leads away from, and not towards, the domain of philosophy and metaphysics.

M. B. WRIGHT.

Psycho-Analysis and the War Neuroses. By DRS FERENCZI (Budapest), KARL ABRAHAM (Berlin), ERNST SIMMEL (Berlin) and ERNEST JONES (London). Introduction by Prof. SIGM. FREUD (Vienna). Published by The International Psycho-Analytical Press. London. Vienna. New York, 1921, pp. 59.

This small collection of papers has been published evidently with a very definite end in view, to demonstrate that the study of the war neuroses has done nothing to invalidate the Freudian position with regard to psychogenesis of the psycho-neuroses. The view is clearly indicated in Prof. Freud's Introduction. The theory of the sexual aetiology of the transference neuroses can be demonstrated by using analytic technique; the traumatic neuroses, which would of course include many of the war neuroses, can also be brought into line with the sexual hunger (libido) theory, by "advancing and making use of the idea of a 'narcissistic sexual hunger (libido),' that is to say, a mass of sexual energy that attaches itself to the ego and satisfies itself with this as otherwise it does only with an object."

Dr Ferenczi devotes the first part of his paper to a brief survey of the literature on the war neuroses. He points out how the organic-mechanistic theories which held the field in the early days of the war became steadily replaced by the work of observers who based their practice entirely on the psychogenetic conception of the traumatic neuroses; as he says, "an advance, although one that is not admitted has taken place in the attitude of leading neurologists towards the teachings of Psycho-Analysis." He admits that the sexual foundation of the narcissistic neuroses is less easily demonstrated than in the transference neuroses, especially for those who still have difficulty in grasping the Freudian conception of sexuality.

Dr Karl Abraham quotes from his experiences to prove his contention that the neuroses are not to be understood without taking sexuality into consideration. He gives a short character sketch of the potential war neurotic, which, true as it is of many cases, could not be applied to a large number who have a much more normal previous history. The following are the main predisposing characteristics: lack of initiative and of impelling energy; diminished sexual activity, the sexual libido being checked through fixations, weak potency or potency only under certain conditions; attitude towards the female sex disturbed through partial fixation of the sexual libido in the developmental stages of narcissism.

Dr Abraham points out, as have other writers in this country and America, that the need to face dangerous situations is not the only demand which may prove too much for the stability of the individual. The need to kill, with all its implications, can undoubtedly cause such conflict that a solution may only be found in a withdrawal from the demands of reality to the infantile narcissistic level. In writing of the well-known euphoria of many of the severely wounded, especially in the amputation hospitals, Dr Abraham puts forward the suggestion that "the damaged part of the body receives for them a significance as an erotogenic zone which did not previously belong to it." The word erotogenic in this connection may evoke hostile criticism, but if the word be taken in its true Freudian sense there is no doubt that the mutilated limb or amputation stump can become, for the time at any rate, a true love-object—a symbol not only of a service given to the community but also of security from the re-experience of horror which had been well nigh unbearable.

The paper by Dr Simmel is the least valuable of the series. It is interesting as a record of the value of the cathartic method of treatment in the relief of symptoms, and Dr Simmel rightly does not claim more than this. His "analytical-cathartic" method does not probably differ essentially from the method of hypnosis with abreaction that has been found of service in the hands of other observers, except perhaps that, Dr Simmel being imbued with Freudian doctrines, the so-called abreaction may have been obtained from a deeper or, at any rate, different level of the preconscious than if the war experience only was singled out for revival. The more theoretical part of the paper is lacking in clearness, and the author starts rather many hares in attempting to describe the mechanisms involved; auto-suggestion, auto-hypnosis, dissociation, regression, are all called into service, and the reader is left rather breathless by the statement that the unconscious has a salutary power of attracting an entire psychosis into itself—surely a large mouthful even for the unconscious.

The last paper by Dr Ernest Jones has probably been read by many either in the *Proceedings of the Royal Society of Medicine* or in his *Papers on Psycho-Analysis*. It is, however, well worthy of inclusion in the present volume and will repay very careful study. The Freudian position is again clearly stated, and although admitting that much remains *sub judice*, he demonstrates how, by a legitimate enlargement of the conception of the libido, the traumatic or narcissistic neuroses can be interpreted in the same terms. The analysis of normal and morbid fear is extremely suggestive, the whole problem of fear being one which in Dr Jones' opinion should be considered apart from that of war adaptation in general.

It is devoutly to be hoped that the war neuroses will soon have an interest which is mainly historical, but three at any rate of the papers in this small volume have a permanent importance. They demonstrate how Freud's "empirical and tentatively progressing theory" is valid for all conditions of psychogenic origin, although other observers have hailed the war neuroses as convincing evidence of the untenability of Freud's main position.

Dr Jones' considered statement should be born in mind. "For my own part I have the utmost difficulty in believing that a current wish, however strong, that is half conscious and sometimes fully conscious can ever in itself produce a neurosis, for it contradicts all one's knowledge concerning the nature of neuroses, as well as my experience, such as it is, of war neuroses themselves."

M. B. Wright.

The Beloved Ego. By Wilhelm Stekel, M.D. Authorized translation by Rosalie Gabler. (Kegan Paul, Trench, Trubner and Co. Price 6*s*. 6*d*.)

The author of this book seems to stand at a point between Freud, Jung and Adler, with a strong leaning towards the last-named. He regards the will to power as the fundamental motive in life. Acknowledging his debt to Freud he says he has "retained the best of his teaching, and from it has evolved a new one." In his view "every new soul must mean a fresh problem for the investigator."

Though completely disillusioned as to the existence of any absolute virtue in human beings, he yet obviously retains a strong love for humanity; and while the struggle for power is on the one hand the undoing of mortals, he sees in it, on the other hand, the impulse to individual freedom. What is mostly lost sight of is the need for inner freedom, without which there is no joy in life.

For this lack of freedom the blame falls primarily upon wrong education. Wrong ideals are placed before the child. The early laudations he hears expressed by prepossessed relatives give him an overweening estimation of his worth, which vanishes at the first real contact with the world, and can only be compensated by power-phantasies, and projections into others. Children should be educated to be modest and satisfied, by which means alone can they attain to joy in life. We are to beware of idealism which is only a form of egoism. The will to power erects sublime aims built upon the supposed exceptional character of the individual in question. The neurotic, from coming to have too high an aim arrives at having none at all, and wanders hesitatingly on the path of indecision. All the love the individual gives, not only in childhood but also in later life, is love of himself in another. "From of old the power that makes two people love each other is self-love. Don Juan seeks through a succession of conquests only to find himself." "The boundless over-estimation of the ego has another unfortunate aspect. Through the disappointments of life or other physical causes, it changes into its opposite; because all life appears in a double form (the law of bi-polarity)." This swinging from one extreme to the other confounds all aims, and imperils the happiness of all human relationships. It is egoism that makes the relations between the sexes so covertly hostile.

The author discusses the causes of the general non-success of marriages. "To love means to feel—and where feelings rule, the intellect becomes a hopeless slave." The lover first projects himself into the Beloved, and, rationalizing his choice, discovers only adorable qualities, which collapse as soon as love disappears and is transformed into hate, which in turn magnifies every fault. "Every desire is opposed by another desire which holds it in check." Between the sexes there is a ceaseless conflict, because each individual desires to rule. The subjection of the lover to the loved-one only represses for a season the will to power. The hate which ensues allies itself with the ego in the fight against love; for when we love are we not in the power of another?

"Marriage is a secret struggle between man and wife"; the most peaceful marriage "is an armed peace" or ends in the total submission of one or other party. Happy those rare beings who, capable of overlooking trifles, can concentrate on large aims. "One must not demand everything from love, one must not over-estimate one's own love....Many marriage soups cannot get warm because one puts too big pots on a small fire." To the author it is clear that this conjugal fight will never end, because owing to the law of bi-polarity every defeat is a victory, and every victory a defeat. Most people have to be content at best with either sensual love or spiritual love, for only the rarely developed and extraordinarily fortunate achieve the great miracle of a really happy marriage in which, in man and woman, sense and soul are equal partners.

The book contains an interesting chapter on Degenerate Children. The commonest cause of such child-failures lies in unhappy marriages. After the pessimistic outlook for conjugal happiness depicted above one would expect to find many more degenerates than actually appear. Nevertheless there can be no doubt of the evil effects of parental quarrels on the psychology of the neurotic or degenerate child. The author has much to say about the evil effects of spoiling children, and little about the equally bad effects of under-estimating and neglecting a child's powers. He does however point out that failure to bring out the real resources of a child (generally because too much is done for him), results in under-development that leads to an overpowering sense of inferiority. Some children are educated in fear and doubt, and subtly robbed of independence and suitable adventure. "They are warned against too great happiness and reminded that tears succeed laughter." Too much repentance and renunciation are demanded, although in another chapter Dr Stekel considers the necessity for renunciation is not sufficiently inculcated. Certain natures seize upon prohibitions as a reason against enterprise. Not only children, but everyone, should be graduated in a noble enjoyment of life—not egoistic joy, and "at any price"; rather "we must love goodness because it is good, and because we wish to represent a higher type of man."

Some of the psychological problems connected with money are discussed here. Perhaps the following, though pleasing, is a little too facile. "Our relations towards money demand a tranquil and firm attitude of mind. The child who can handle money well has a calm conscience, which gives promise of a strong conscience later on. We should not ponder deeply about money' but should accept it lightly and pass it on. We should acquire and redistribute it, without reflecting upon how much trouble, sweat, blood and worry is attached to it."

In the chapter entitled "Mali-Mali" an analogy is drawn between this curious disease and the followers of fashion. In this hysterical illness the sufferers are obliged to imitate everything that is done by another person. The disease affects the poorer population of the Philippine Islands. When we look into our own civilization we find collective movements which are equally pathological, where the same shibboleths are uttered, the same amusements indulged in, the same fashions followed in clothes, pictures, and music, quite regardless of individual taste.

Under the designation "Half-men," neurotics and others whose will is divided are described. The Whole-men "alone find the middle path amongst all the contradictory influences of ethics, religion, duty and the ego-impulses, without transgressing the boundaries of the eternal laws."

Indulgence in phantasy is described in one chapter as "Psychic Opium." Dawdlers of every sort are recognizable as members of a drugged community. The author thinks the tendency to day-dreaming is at present on the increase, because in this generation children are habitually spoilt.

A number of aphorisms are given at the end of the book, many of which are witty and intentionally paradoxical. In the text of the book, however, several paradoxical and contradictory statements are to be found. This is because the writer himself passes rather carelessly from pole to pole, or because the chapters, which form separate essays, have been written in different moods. The reader will agree or disagree according to whether his opinion is based upon objective or subjective data; for although there is much of value in this book, the issues between the two points of view are somewhat confused, so that one may say of some of the intentionally startling statements that they are never quite true, and never quite false; as for instance the dictum that "every neurotic is a criminal lacking the courage to commit a crime." The reader is forced to ponder whether the neurotic is to be judged from the standpoint of the conscious or the unconscious.

CONSTANCE E. LONG.

The Form and Functions of the Central Nervous System, an Introduction to the Study of Nervous Diseases. By FREDERICK TILNEY, M.D., Ph.D., Professor of Neurology, Columbia University; and HENRY ALSOP RILEY, A.M., M.D., Associate in Neurology, Columbia University; Foreword by GEORGE S. HUNTINGTON, Sc.D., M.D., Professor of Anatomy, Columbia University. New York: Paul B. Hoeber, 1921. Large 8vo, xxiv + 1020 pages, 591 figures containing 763 illustrations, of which 56 are coloured. Price, $12.00 *net*.

This imposing treatise of more than a thousand large pages and nearly eight hundred fine pictures loses none of its dignity on acquaintance. It certainly is an important reference and text-book for all the classes of scientific folk who are concerned with the *magnum opus* of creative Evolution, the human nervous system.

The contents, divided into fifty chapters, are indicated by the following list:

The Central Nervous System, Its Importance and Significance; Embryological Development of the Central Nervous System; The Unit of Structure of the Nervous System, The Nerve-Cell or Neurone; The Integration of the Neurones to form the Nervous System, The Neurone Theory; Exposure and Investigation of the Spinal Cord *in situ*; The Spinal Cord, Its General Character and Anatomy, Its Coverings and Circulation, Histology of the Cord Segment, The Function of the Gray Matter in the Cord Segment, The Function of the White Matter in the Cord Segment, Its Principal Syndromes; Removal of the Brain and Investigation of the Brain Case; The Medulla Oblongata, Encephalization and a General View, Relations, Surface Appearance and Anatomy, Internal Structure and Histology, Functional Significance, Principal Syndromes; The Pons Varolii, Significance, Anatomy and Embryology, Internal Structure and Histology, Functions and Principal Syndromes; The Cerebellum, A General View of its Evolutional Significance, Relations, Surface Appearance and Anatomy, Internal Structure, Histology and Embryology, Its Functional Significance, The Principal Cerebellar Syndrome and Its Variations; The Midbrain, General Significance, Anatomy and Embryology, Internal Structure and Histology, The Functions and Principal Syndromes; The Interbrain, The General Significance, Anatomy and Embryology, Internal Structure and Histology, The Functions and Principal Syndromes; The Endbrain, The Cerebral Hemispheres; Surface Anatomy, Development and Comparative Morphology, Cerebral Measurements and Cranio-Cerebral Topography, The Coverings of the Brain, The Cranio-Cerebral Circulation, The Cortex; the Medullary Substance, Functional Significance and Principal Syndromes of the Medullary Substance, The Internal Nuclei, Functional Significance and Principal Syndromes of the Corpus Striatum, Cerebral Localization, The Somatic Motor Area, The Somesthero-Sensory, Visual and Auditory Area, The Limbic and Insula Area, The Parietal Frontal and Prefrontal Areas, The Internal Structure of the Hemispheres and the Ventricular System.

There is a useful Glossary of five pages; there are important references for supplementary reading; and a forty-three-page index, invaluable.

"Functions and principal syndromes" are conspicuous, it will be observed. Indeed, an important educative feature of the book is the set of twenty-five or thirty symptom-groups (syndromes) of as many important neuropathological conditions, the latest adaptation of the case-history method. They serve to directly fix in the reader's mind the relation between functioning structures and their respective diseases. "By this method," as the Preface notes, "the anatomy and the physiology of the central nervous system are no longer permitted to remain as independent branches of medical science, but are here incorporated as essential parts of the practical knowledge necessary to the proper diagnosis and treatment of disease."

The authors state that their present work is "designed to fill the gap between morphology and the practical requirements of clinical medicine. It aims *to visualize the living nervous system, to make accessible an appreciation of its vital relation to the functions which go to make up life as well as the defects in these relations which result in disease.*" As Professor Huntington points out in his Foreword, it tends to obliterate the evil "divisions commonly existing between premedical, preclinical, and clinical studies," a consummation, assuredly, devoutly to be wished. Sometime we shall teach medical students some psychology!

"In addition to much original work, many sources have been drawn upon for neurological facts and interpretations. Chief among these have been the great modern masters of Neurology, Cajal and Déjerine. The more recent contributions of distinguished English neurologists, including such leaders as Gaskell, Elliot Smith, Hughlings Jackson, Head, Sherrington, Horsley, Holmes, Campbell, and Wilson, have provided a wealth of material," while the "American School" of Neurology is adequately represented besides, Herrick, Huber, Donaldson, Jolliffe, Dana, Dercum, Starr, *et al. per terras.* The British reader (on whom the sun never sets) is particularly requested to see evidence herein that Americans (other than the "red" Americans) have long taken much thought in affairs of the nerves and the mind.

The discussion of the cortex and that of the autonomic nervous system are very thorough and timely, and will therefore provide the real student of psychology (Freudian and conservative, both), of sociology, and of applied physiology ("behaviorism"), as well as of psychiatry, what most they need in the present theory of their confluent work. Here is the somatic "sanction" of the subconscious (co-conscious) aspect of mentality well set forth. One may understand a little better than before how affects colour, or even determine, our thoughts; why the great cortex represents movements unlimited but never muscles or glands; what inhibition is; what Head means by "levels"; etc.—just the important base-principles one most needs to know about.

The book is a noteworthy systematic treatise—seemingly an excellent investment for all who have funds of time and interest idle.

GEORGE VAN NESS DEARBORN.

Man's Unconscious Spirit: The Psychoanalysis of Spiritism. By WILFRID LAY, Ph.D. London: Kegan Paul, Trench, Trubner and Co. 1921. pp. 337. 10*s.* 6*d.* net.

Nothing is more surprising to the student of psychical research than the puerility of the criticisms which are from time to time brought forward against it in the name of science. Very few of these critics seem able to discriminate between Psychical Research and the crudest and most uncritical forms of Spiritism, and they write as if of the opinion that "any stick is good enough to beat a dog with." Psychoanalysis is the latest weapon used in the polemic against psychical research and in this book we have what purports to be "A psychoanalytical inquiry into Spiritism, raising the question whether the energy expended by psychics and psychical investigators in their researches may, or may not, be a conscious desire prompted by an unconscious fear"—the fear in question being the fear of death.

The writer says that all true scientific research proceeds according to the "reality principle" and he thinks he is able to show that all psychical research proceeds upon the "pleasure-pain principle." His respect for "the scientist" leads him to say that he alone can see facts, "because he alone is uninfluenced by the ideal of what he thinks facts ought to be or to show. To become a true scientist one has to learn to care not a whit whether a thing is one way or the other, but only to care to find out which way it is." He might have added that this is also the only way to become a true "psychical researcher." But instead of doing so he draws a sharp line between the former and the latter, and implies that in his investigations the scientist is never deflected from the path of truth by any promptings of his unconscious, or influenced in any way by his wishes or his prejudices; the psychical researcher, on the other hand, is so obsessed by the fear of death that, in the presence of a fraudulently "levitated" table, his desire for everlasting life so disturbs his senses and his judgment that he fails to see the medium's foot which is the cause of the levitation and regards a table thus suspended in mid air as a proof of the immortality of the soul.

Because of the speedy regression to childishness which is brought about in the psychical researcher when the fear of death lays hold of him, Dr Lay would insist that every person who ventures upon psychical research should first be psycho-analysed; for then, presumably, he would be able to see the foot supporting the table (if the light were good) and he would realize that there is no necessary connection between levitation and immortality. One may wonder why Dr Lay thinks it worth while to prejudice psychical research by insinuating that the psychoanalytic doctrine of the influence of unconscious wishes has here some special significance, for he is quite aware that it applies to every form of research whatsoever. Indeed, towards the end of his book he quotes Ferenczi's remarks on this topic: "Unconscious affects (emotions), however, may falsify the truth not only in psychology but also in all other sciences...Everyone who works in Science should first submit himself to a methodical psychoanalysis." This may be very sound advice, but, for the present, it is a counsel of perfection; and in this matter the "scientist" cannot afford to throw stones at the "psychical researcher" until he himself has submitted to a methodical psychoanalysis.

Dr Lay regrets the widespread ignorance about psychoanalysis and says that "almost all people interested in spiritistic phenomena are ignorant of the newer psychology and few of those who know of it have failed to misconstrue it." With equal truth it may be said that almost all people interested in the newer psychology are ignorant of psychical research and few of those who know of it have failed to misconstrue it.

His assumption that all psychical research proceeds according to the pleasure-pain principle leads him to say: "I cannot too strongly emphasise that the abandonment of the reality principle of thought is the first step towards second childhood, and the actions of men of intellect in turning toward spiritism is an unfailing indication of involution, whereupon they cease to be scientists, become first poets, then children and finally infants." This sounds very fine; but does Dr Lay really believe that the late Sir William Crookes, for instance, ceased to be a scientist when he, as a young man, took an interest in spiritism; and does he think that the brilliant researches of Crookes's middle and later life correspond to the mental productions of poets or of children or of infants?

In support of the assertion that knowledge of psychoanalysis is often accompanied by ignorance of psychical research the following quotation may be cited: "The thesis of this book is that all so-called communications, instead of being from a conscious control by another personality, physically separate from the medium, are in reality from an unconscious control by a secondary or subsidiary personality of the medium himself or herself" (p. 86). Does Dr Lay suppose that he is here putting forward a notion that is entirely new?

Does he not know that *as hypothesis* it is as old as psychical research itself and that it has been one of the working hypotheses of students of this subject for more than thirty years? In putting forward this hypothesis as a thesis to be maintained, and in assuming that he has successfully maintained it, he is making pretence to knowledge which he shows no evidence of possessing and is laying himself open to the suspicion that he has but hazy notions of the nature of scientific proof. That his thesis contains the truth is very likely,—the *a priori* grounds for its acceptance are greater than those that can be adduced in support of the spiritist's belief; but *a priori* proof of a thesis has rather gone out of fashion in science and, if he appeals to science, we are bound to ask Dr Lay to point us to the *experimentum crucis* which shall decide between the rival hypotheses.

This he does to his own satisfaction; but unfortunately the "experimentum" is one that has not yet been performed. If you analyse the investigator and analyse the medium, nothing more will be heard of supernormal phenomena. That is the sum and substance of Dr Lay's book, but he gives no indication that either he himself or anyone else has ever carried out the necessary work.

The possibility of utilising psychoanalytic methods in psychical research has not escaped the notice of students of this subject and the importance of the thorough analysis of a medium has been recognized by some of them for many years; but the difficulties of finding a medium willing to be analysed and the *difficulty of analysing a medium* are greater than might be supposed. Had Dr Lay succeeded in doing so and had he been able to bring his results in support of his thesis, we should have acclaimed him as the greatest "psychical researcher" of us all.

T. W. MITCHELL.

NOTES ON RECENT PERIODICALS.

Internationale Zeitschrift für Psycho-Analyse, 1920, part IV.

[Owing to the fact that *The International Journal of Psycho-Analysis*, in English, now covers much the same ground as the *Internationale Zeitschrift für Psycho-Analyse* in German, we shall no longer publish comprehensive abstracts from the latter. It will, therefore, henceforth take its place among others in these Notes on Recent Periodicals. Ed.]

"Some Contributions to the Psychology of Homosexuality," by Boehm, has the first place in this number and will be continued in the next. It consists mainly of descriptive material collected by the author from the social life of an isolated North German seaside town (with its "students' associations"), from a South German provincial town, from a group of people conducting an 'open-air cure' movement, from the field in war-time and from the accounts of medical colleagues in naval and military service. The trend of the evidence is to show the close connection between polygamous and homosexual tendencies and the unsuspectedly powerful factor of *defence against homosexuality* behind compulsive or excessive heterosexual acts (frequenting brothels, etc.). That this is one of the 'masks' of latent homosexuality has long been known; this collection of evidence is interesting confirmation, from observations in 'normal' life, of a fact revealed first by analytic investigation of neurotics.

Groddeck contributes an analysis of a symptom: recurring pain in the legs, ostensibly so severe as to inhibit all mental functioning while the attack lasted. The first association to pain in the legs brought "much walking—the Wandering Jew" and proceeded in the usual way, leading to a revelation of the patient's repressed mockery of, and contempt for, his lame father and identification with him; whereupon the pain vanished. Interesting associations with the idea of pain, the figures of Christ and the Wandering Jew, and the symbol of the cross are discussed, also the question of the use (or misuse) made by patients of reading psycho-analytic literature, always so prejudicial to the treatment.

The shorter communications chiefly concern dreams. Amongst them, Roheim, whose brilliant work on folk-lore, savage rites and customs and so on, is well known, gives two examples of dreams corroborating Freud's hypothesis of a 'primal scene' (*Urszene*) suggested in a recent casuistic study: "The History of an Infantile Neurosis." Very amusing are some dreams recorded by Friedjung which occurred on an occasion when he had promised to telephone to a friend during the night at a certain hour, and thus to fulfil the function of an alarum clock for him. The dreamer prided himself on his ability to wake within five minutes of any specified time, and this narcissistic vanity and the accompanying dread of failure are delightfully evident in the dreams. Moreover, they perform the function of preserving sleep up to the last possible moment and then alarm the dreamer sufficiently to wake him at the correct moment! A quotation from Victor Hugo (*Les Misérables*, t. III, l. v, ch. 5) is included in this section: "...On jugerait bien plus sûrement un homme d'après ce qu'il rêve que d'après ce qu'il pense. Il y a de la volonté dans la pensée, il n'y en a pas dans le rêve. Le rêve, qui est tout spontané, prend et garde la figure de notre esprit....Dans ces aspirations on peut retrouver le vrai caractère de chaque homme....*Chacun rêve l'inconnu et l'impossible selon sa nature.*"

As usual, valuable critical reviews of recent books are contained in this number.

J. R.

The International Journal of Psycho-Analysis, Vol. I, part IV, 1920.

The most important article in this number is the opening contribution by Freud, "A Child is Being Beaten." This title is taken from the phrase so often used by patients in giving an account of their "beating phantasies." The frequency of the occurrence of such phantasies in patients suffering from hysteria or obsessional neurosis is a revelation to everyone who takes up psycho-analytic treatment, and this paper of Freud's will be of the greatest value to analysts in their investigation of cases of this kind. Freud describes in particular the growth of the phantasy in women and shows that there are three phases, in each of which there is a difference as regards the relation of the patient to the phantasy and as regards its object, its content and its significance.

In the first phase, which belongs to a very early period of childhood, the child being beaten is never the patient: it is some other child, a sister or brother, who is a rival for the father's love. The phantasy means "My father does not love this other child, he loves only me."

In the second phase the child being beaten is the author of the phantasy, which is now unmistakably masochistic in character. The content of the phantasy is "I am being beaten by my father." This change has been brought about by the sense of guilt that accompanies the repression of the incestuous love for the father which arises at the stage of genital organisation. The phantasy of being beaten by the father is a direct expression of the sense of guilt—a punishment for incestuous love. The love for the father is here subordinated to the sense of guilt but it is not unrepresented in the phantasy. For its repression causes a regression to the pregenital stage of sexual organisation so that the being beaten "*is not only the punishment for the forbidden genital relation, but also the regressive substitute for it*, and from this latter source it derives the libidinous excitement which is from this time forward attached to it."

In the third phase the child who produces the phantasy no longer appears in it except as a spectator. "A child is being beaten," generally one of a number of children, most frequently boys. The person doing the beating is no longer the father but some father-substitute such as a teacher or some other person in authority. This phantasy is unlike that of the first phase in that now it is accompanied by strong and unambiguous sexual excitement and so provides a means for onanistic gratification. The form of the phantasy is sadistic but the gratification derived from it is masochistic. The child being beaten is a substitute for the child who has the phantasy.

A paper by Frederic J. Farnell on "Erotism as Portrayed in Literature" is an example of the now common practice of examining literary and artistic productions in the light of Psycho-Analytic doctrines. Such a method of dealing with the works of the poets may be interesting and instructive, but there would seem to be some danger that the psycho-analysts may lose all sense of value and of beauty if they become too curious about the forces at work in the poet's mind when he produces a masterpiece such as, for example, the "Ode on a Grecian Urn," or the "Ode to a Nightingale."

Farnell speaks disparagingly of the attitude of people who "recognize poetry and the novel as a beautiful piece of material...just as they do a piece of statuary or a picture." This he considers being "satisfied with the surface when the real genuine value of the poem or the novel is the interpretation of the writer's own feelings." To the writer of these notes this appears a fundamentally false standard of value and a false canon of art. The genuine value of a poem depends on the universality of its appeal, not on its relation to the poet's feelings. The "Ode on a Grecian Urn" and the "Ode to a Nightingale" have the same magic in them whether or not the reader has ever heard of Fanny Brawne.

In "A Note on Hazlitt," L. C. Martin points out a number of passages in Hazlitt's works "in which he lays stress on the existence in the human mind of motives or emotions which are 'hidden' in the sense that they are unknown to ourselves, or that we refuse to acknowledge their existence." The striking anticipations of Freud's dream theory in Hazlitt's essay "On Dreams" were pointed out by Albert Mordell in his book "The Erotic Motive in Literature," and this note by Martin shows that appreciation of the part played by unconscious motives was a vital element in Hazlitt's outlook during the latter part of his life. Martin thinks that Hazlitt had reached something like "a consistent and dynamic though loosely woven theory of the Unconscious."

The collective Reviews of Psycho-Analytic literature begun in Part III are continued; in the present number the work of French, Dutch, Italian, Spanish and Hungarian writers is dealt with.

The Journal of Neurology and Psychopathology, Vol. II, No. 5.

This number opens with an important article on the Argyll Robertson pupil by Kinnier Wilson. Its interest is mainly neurological. Detailed consideration of the anatomico-physiological arc for the light reflex and of the path for convergence and accommodation is followed by the author's conclusions regarding the site of the lesion underlying the Argyll Robertson sign. This he believes to be most commonly found in the neighbourhood of the aqueduct although in rarer cases it may be nearer the back of the eye, in the course of the optic nerve or tract distal to the geniculate bodies.

Maurice Nicoll contributes a paper entitled "Some Analytical Interpretations." Mental development is conceived as consisting of an increasing differentiation of the primal unconscious—a personal differentiation from the collective unconscious. When there is a minimum of differentiation the collective unconscious is realized as if it lay in the outside world; it is projected into the object. This is the source of the magical quality ascribed to objects by primitives and children.

In the next stage, when discrimination between the objective and subjective becomes possible, the unconscious becomes detached from the object and mythology arises. In this way a distinction is made between the world of the psychological realities and the world of the objective realities. The existence of these two phases in the mental evolution of man—the projection of the unconscious into the object and its withdrawal from the object into subjective myths—is held to justify the two-fold interpretation of dreams (the subjective and the objective rendering) on which Jung has insisted.

In the course of analysis elements belonging to the collective unconscious may again be projected into objects in the objective world, *e.g.* the analyst, and to avoid identification with the collective unconscious and the remarkable consequences of this, *these collective psychological contents must be detached from the objects of consciousness and realized as psychological realities outside the individual psyche* (Jung).

Starting from these principles Nicoll goes on to illustrate the interpretation of dreams in respect to their archetypal constituents as opposed to those derived from the personal unconscious. His main example is a castration dream which is interpreted as signifying "the sacrifice of the infantile personality."

Alfred Carver writes a Critical Review entitled "The Wish and the Autonomic System." He deals chiefly with the work of Kempf, who, in a series of monographs and in a big book, has translated the concepts of psychopathology into the language of physiology. The behaviourists' notion that consciousness is superfluous and that conduct can be adequately accounted for without taking it into consideration, leads them to suppose that the only question that psychology has to answer is: What is the organism doing? But, as Carver points out, a complete answer should explain not only what the organism is doing but also why it is doing it. Kempf has taken up this question from the behaviourist standpoint and has tried to demonstrate the physiological basis of the wish. This he finds in a localized autonomic-affective craving which compels the organism to such behaviour as shall satisfy the craving. Thus, the basis of the wish is peripheral. "The essence of Kempf's thesis is the translation of the wish —established by Freud as the unit of psychological process—into terms of indefatigable visceral tonus and postural tensions compelled by autonomic-affective cravings." Carver thinks that further researches are necessary before we can accept the dominating rôle in psychology which Kempf ascribes to the autonomic system.

In an Editorial note on "The Organic Aspect of Shell Shock" it is maintained that "It is far more likely that the emotional 'psychic' state which follows an explosion is due to the antecedent organic reaction of the nervous system than that the organic state—that which gives signs like those associated with hyperthyroidism—arises after the soldier has pondered over the nearness of his contact with death." The possibility of the symptoms of early cerebro-spinal syphilis appearing after stress, accident or concussion and disappearing spontaneously should be taken into account in judging the results of psychological treatment of shell shock—"the cure cannot be allowed in a strictly scientific sense unless the Wassermann reaction has been shown to be negative."

The Psychoanalytic Review, Vol. VIII, No. 3, July, 1921.

"The Dream in Russian Literature" is the title of a paper by Gregory Stragnell in which he quotes a number of dreams from the writings of various Russian authors. His contention is that in Russian literature the meaning of dreams was more clearly understood than in that of any other country. They understood the use of the symbol in its relation to everyday life for they were constantly employing it in their carefully censored writings. The strict censorship maintained over all writings in Russia led to many kinds of subterfuge and symbolic writing became an art. "Their constant conscious use of symbolic writing familiarized them with the symbol when they encountered it in their own unconscious dream material."

In "The Parataxes: A Study and Analysis of Certain Borderline Mental States," T. V. Moore introduces some new terms whose use it is to be hoped will not become common. Psychotaxis is used to signify the mental adjustments of individuals to pleasant and unpleasant situations. Positive psychotaxis is the tendency to enjoy to the fullest all pleasant experiences. The opposite tendency to avoid unpleasant situations is negative psychotaxis. Abnormal emotional adjustments are called Parataxes. "The parataxes are elements of the psychoses and psychoneuroses as the psychotaxes are elements of instinctive reactions." Thus, for example, a 'shell shock' soldier who has "nothing the matter with him except that his right arm is trembling" is cured by a few conversations and is sent back to the front where he stays and makes good. "What we are dealing with here is only one element in the hysterical group of reactions, a simple parataxis, and not a psychoneurosis."

The paper deals in some detail with "the parataxis of depression" and "the parataxis of anxiety," but it cannot be said that much is gained by the introduction of the new terms.

"An Autobiography" by C. M. Haviland is an account of childhood experiences written by a young man of twenty-three on the eve of his departure for the battlefields of France. It is an interesting record of the phantasy life of a child and Haviland discusses the psycho-analytic interpretation of its more important sections.

In the "Psychology of one Pantheist" Theodore Schroeder gives an account of Paul Blaudin Mnason who was convicted for allowing himself to be worshipped as the Son of God. He led a criminal career until his thirty-sixth year. Then he was converted and soon afterwards claimed to be God. "From the psychological view-point it might be said that Mnason's apotheosis is but a compensatory wish-fulfilling phantasy. For him this served the end of neutralizing a great feeling of inferiority...the whole performance looks like erotomania whose persistent ecstasy is only a psychologic autoerotism, which may be the outlet for any form of repressed perversions of the sexual impulse."

The Journal of Abnormal Psychology, Vol. xv, No. 4.

Professor James H. Leuba in a paper entitled "A Modern Mystic" considers the claim made by all mystics and by some philosophers and psychologists that in mystical ecstasy something superhuman comes to expression. He deals with this question in connection with the experiences of Mlle Vé, which were recorded by T. H. Flournoy in *Archives de Psychologie*, tome xv, 1915, pp. 1–224, under the title "Une Mystique Moderne." Mlle Vé at first regarded her ecstatic experience as a manifestation of an impersonal superhuman power which gave her absolute assurance of the reality of the Divine. The experience was repeated thirty-one times and Mlle Vé was able to verify her initial description and to indicate alterations or new features. "This she did with a power of introspection equal to that of St Theresa and a critical ability far beyond hers." In her life there was intense struggle with a forbidden sex passion, and when the connection between this and her trances became clear to her, she had "the most radical doubt as to the nature of the experience." In one place she says, "I almost come to the conclusion that I have allowed myself to be deceived by my imagination, that there is nothing in it outside of my own self." Leuba thinks that these doubts must be accepted as proofs that her assurance referred to a fact not of "immediate" experience—the ground always given by mystics for the noetic value of ecstasy—but to the construction which she placed upon the immediately given. "She could not have doubted her feeling of cold, or her sense of fatigue, or her greater hopefulness; but she could doubt an interpretation of these facts."

"What Drives the Dream Mechanism" is the title of a paper by Lydiard H. Horton, in which he discusses some questions raised by the "Inventorial Analysis of Dreams." He puts forward as the principle of all dream-drives "not any one thing that can be classified under the head of an instinct, a wish, a stimulus from external or internal sources or any form of transmuted mystic energy, but simply the sum or rather the dynamic resultant of a considerable variety of forces impinging upon the nerve channels at the moment." He considers the psycho-analytic formulation of dream processes unsatisfactory because it over simplifies the data of dynamic and social psychology and disregards the large part played by purely physiological and sensory factors in driving the dream.

Daniel H. Bonus contributes a report of a case which disclosed "Over Valuation of the Sexual as a Determinant in the Etiology of the Psychoneuroses."

The Journal of Abnormal Psychology, Vol. xv, Nos. 5 and 6.

This double number opens with an interesting paper "On Instincts," by William Morton Wheeler, Professor of Economic Entomology, Harvard University. He recognizes three vital currents of opinion on the subject of instinct corresponding to three different ways of looking at the problem of life in general. These he designates as the theological or teleological, the physiological or mechanistic and the psychological or anthropomorphic. He indicates three methods of investigating instincts, the experimental, the historical and the psychopathic. The experimental method is of limited service in the departments of biology that deal with the living organism. It is necessary to supplement it with the historical method. He illustrates the use of this method by detailed consideration of three typical insect instincts. The third method, the psychopathic, promises, he thinks, important results and he believes that the work of the psycho-analysts must eventually profoundly affect animal no less than human psychology. He has but a poor opinion of our traditional psychologies which he thinks are about as useful for purposes of understanding the human mind as dissertations on Greek statuary would be to a student eager for a knowledge of anatomy. He says, "After perusing during the past twenty years a small library of rose-water psychologies of the academic type and noticing how their authors ignore or merely hint at the existence of such stupendous and fundamental biological phenomena as those of hunger, sex and fear, I should not disagree with, let us say, an imaginary critic recently arrived from Mars, who should express the opinion that many of these works read as if they had been composed by beings that had been born and bred in a belfry, castrated in early infancy and fed continually for fifty years through a tube with a stream of liquid nutriment of constant chemical composition."

The use of the word-association test for the detection of criminals is illustrated by Herbert Sidney Langfield in a paper on the "Psychophysical Symptoms of Deception." He describes in some detail the performance of an experimental laboratory "crime" and the methods by which the detection of the culprit was effected. He found that decided difference in reaction times and mean variations were much more reliable factors than the quality of the reaction words. Blood pressure records taken during cross-examination showed that the blood pressure of the guilty person rose considerably higher than did that of the innocent one, although the latter was much more nervous than the former.

Cavendish Moxon, writing on "Mystical Ecstasy and Hysterical Dream States," examines a work by Ferdinand Morel of Geneva, entitled "*Essai sur l'Introversion Mystique*, Etude Psychologique de Pseudo-Denys l'Areopagite et de quelques autres Cas de Mysticisme." Morel regards the whole ecstatic experience as a sexual manifestation which implies a regression to an infantile manner of erotic satisfaction. Moxon shows how Morel's theory of mysticism is supported by the psycho-analytic practice of Abraham and others. The mystics are a sub-class of hysterics and God is a projected image of the narcissistic libido. "We must therefore posit in the mystics as well as in the hysterics a primary auto-erotic or narcissistic activity in the sublimated or spiritualized form of a religious experience or a mystic ecstasy."

"The Kind of Men in State Prison," by A. W. Stearns and John V. Chapman, is an analysis of 107 men admitted in one year to the Massachusetts State Prison at Charleston. Crimes involving sex or personal violence are explained on the ground of low ethical development rather than mental disease or criminal habit. "Stealing lacks the emotional element found in other crimes and is more apt to be due to mental defect or criminal habit. The group of individuals in this class while receiving the shortest sentences seem to present a greater menace to society than those committing legally worse crimes and receiving longer sentences."

George Humphrey writes at considerable length on "Education and Freudianism." His essay is divided into two parts, the first dealing with "The Freudian Mechanisms and the Conditioned Reflexes" and the second with "The Child's Unconscious Mind." He takes as the text of his discourse the book of Wilfrid Lay, entitled *The Child's Mind: The Relations of Psycho-Analysis to Education.* In the footnotes to the two papers there are many references to psycho-analytic publications, but in what purports to be a thorough-going criticism of Freudian doctrine it is surprising to find only one direct reference to Freud's own writings.

The author's purpose is to try to show that all the Freudian mechanisms—the complex, compensation, projection, rationalization, transference, symbolization, and conflict—"are not entirely new and ultimate processes now first brought to light by the school of Vienna, but that they are all explainable in terms of one common phenomenon, viz. the conditioned reflex."

The extent of the writer's knowledge of psycho-analytic method may be judged by the following quotation: "That the method is often successful when applied by a capable physician there is no doubt, otherwise it would not have been practised for twenty centuries by the Catholic Church."

Morton Prince contributes a short paper on "The Structure and Dynamic Elements of Human Personality," in which he shows how the cases of Multiple Personality studied by him corroborate the views of McDougall and Shand on the part played by the instincts and sentiments in the structure of personality.

T. W. M.

PROCEEDINGS OF THE BRITISH PSYCHOLOGICAL SOCIETY

MEDICAL SECTION

1920	
June 23rd.	An Outline of the Idea of Rebirth in Dreams, by Maurice Nicoll.
October 20th.	Some Biological Aspects of Sexual Repression, by J. C Flügel.
November 24th.	Study of a Severe Case of Obsessions, by James Young.
December 22nd.	Psychology and the Unconscious, by T. W. Mitchell.
1921	
January 26th.	The Problem of the Neurasthenic Pensioner, by Millais Culpin.
March 23rd.	"Mary Rose" and the Problem of the Infantile Personality, by Constance Long.
April 27th.	Enforced Psycho-synthesis in Certain Cases of Analysis, by Paul Bousfield.
May 25th.	Emotion and Eye Symptoms, by W. Inman.
June 22nd.	The Influence of the Endocrines in the Psychoneuroses, by W. Langdon Brown.

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